

Black River Preserve In-Lieu Fee Mitigation Plan

**In partnership with
West Creek Conservancy**

**Black - Rocky (HUC 04110001)
Medina County, Ohio**



Black River Preserve, Ohio © STONE



The Nature Conservancy
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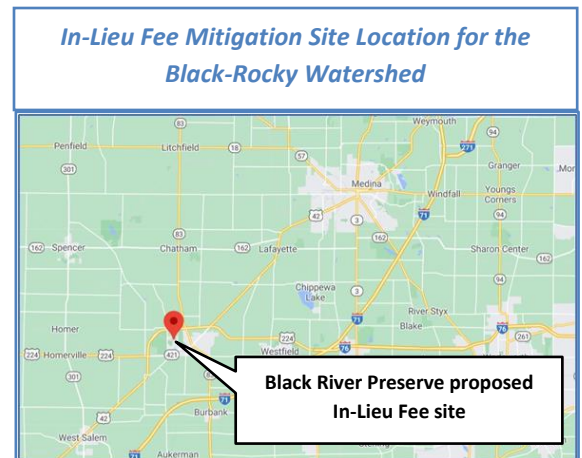
INTRODUCTION

This mitigation plan provides an overview of proposed compensatory mitigation activities for the Black River Preserve In-Lieu Fee Mitigation Project within the Black - Rocky Watershed (Hydrologic Unit Code [HUC] 04110001) located in Medina County, Ohio (Appendix A, Figure 1). The 55-acre mitigation site is part of a 76.2-acre parcel. The remainder of the parcel will be restored by the state-sponsored H2Ohio program. The site is located in the Village of Lodi, just south of U.S. Route 42 and west of State Route 83 (see map below). The mitigation site is centered on the following coordinates: 41.038417, -82.029185.

The Nature Conservancy (TNC) will work with West Creek Conservancy (WCC) as our conservation partner. WCC has a purchase agreement in place for this parcel, which would connect several other parcels owned by Medina County Park District to the east, south, and west. Together, these parcels would comprise the planned Black River Preserve. This project offers an exciting opportunity to expand existing natural areas and coordinate restoration efforts with H2Ohio.

MITIGATION OBJECTIVES

The primary objectives of the Black River Preserve In-Lieu Fee Mitigation Project are the restoration of wetlands, streams, and associated buffers. Our goal is to institute an ecologically sound, well-developed, and feasible restoration plan. The plan will generate in-kind mitigation credits to replace advanced mitigation credits that have been sold in the Black - Rocky Watershed (HUC 04110001) as compensation for activities authorized by the United States Army Corps of Engineers (Corps) and the Ohio EPA through the issuance of permits.



TNC's Ohio Mitigation Team conducted an extensive search for potential mitigation project locations within the Black-Rocky Watershed.

The proposed mitigation project will provide an ecological lift to wetlands and streams on the site to compensate for impacts to wetlands and streams within the 8-digit HUC

watershed. Additionally, the site will provide sustainable compensatory mitigation with minimal long-term maintenance and active management needs per 33 CFR 332.7(b).

When approved, the Black - Rocky In-Lieu Fee Mitigation Project will be designed, implemented, and managed to attain the following basic objectives:

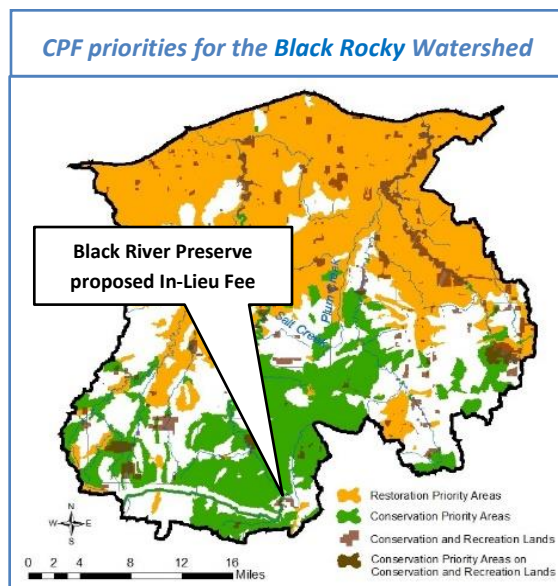
- Restore and enhance streams to provide high quality aquatic habitat, improve water quality, regulate watershed hydrology, and attenuate runoff.
- Restore and enhance riparian buffers to increase aquatic habitat quality, improve water quality, regulate watershed hydrology, and attenuate runoff.
- Produce high-quality wetlands and wetland buffer habitat that will result in a gain in aquatic resource functions that are currently not present on the site.
- Provide a diverse interspersion of restored habitat features and buffers.
- Establish connectivity and habitat corridors within an existing natural area.
- Provide an endowment for the long-term maintenance of the mitigation site.

SITE SELECTION

The objective of the watershed approach as described in the 2008 Compensatory Mitigation Rule “is to maintain and improve the quantity and quality of wetlands and other aquatic resources in watersheds through strategic selection of compensatory mitigation project sites.” A Compensation Planning Framework (CPF) is to be used by ILF programs to “select, secure, and implement aquatic resource restoration, establishment, enhancement, and/or preservation activities” as described further in the Preamble to the Compensatory Mitigation for Losses of Aquatic Resources Rule (73 Fed. Reg. 19598 (Apr. 10, 2008)).

The CPF developed by TNC’s Ohio Mitigation Program (OMP) aligns with the provisions in the rule and is used to establish a science-based conservation approach for setting goals and priorities within each HUC 8 watershed of Ohio. Element 6 of the OMP’s CPF outlines the program’s watershed approach. The project site occurs within a conservation priority area (see map on next page), making it a clear CPF priority.

While the CPF mapping provides a large-scale overview of the watershed and its conservation priorities, it is very important to also assess a potential project based on its specific, on-site characteristics. The OMP Site Evaluation Checklist was developed in order to better apply the CPF to a site-specific location. Criteria that are assessed and scored through use of the checklist include: watershed-based priorities, surrounding land use, special ecosystems present, and nearby conservation priorities. Appendix B contains the Site Selection Checklist for the Mitigation Project site.



The proposed Black River Preserve In-Lieu Fee Mitigation Project met all the mandatory conditions including permanent protection, in-kind mitigation, and location within the primary service area where credits have been sold. The OMP Site Evaluation Checklist Site Metric Score for the proposed mitigation site was 72 out of a possible 100 points.

This site provides an excellent opportunity for restoration given its adjacency to Medina County Park District land to the east, south, and west (Appendix A, Figure 1). Much of the land draining to the site is parkland. Because of this, the site will be protected from adverse impacts such as nutrient loading from agriculture or stormwater from roadways and industrial sites. Additionally, the cost of site acquisition will be shared with the state-sponsored H2Ohio program; TNC would purchase and restore 55 acres, and H2Ohio would purchase and restore the remaining 21.2 acres. The H2Ohio restoration will be conducted on the eastern and western portions of the property. TNC will coordinate with H2Ohio to ensure the restoration design is integrated and sustainable.

The Stream Score Metric for the proposed mitigation site was 80 out of a possible 100 points. The mitigation site received high marks for the Stream Metric score because it offers a large amount restoration opportunities and the causes of impairment to the streams, namely hydrologic modification due to current and historic row cropping, are correctable within the project area.

The OMP Site Evaluation Checklist Wetland Score Metric for the proposed mitigation site was 76 out of a possible 100 points. The score for the Wetland Metric was high because it offers excellent wetland restoration opportunities. The causes of impairment

to the wetland area are a result of past and current hydrologic manipulation for row crop agricultural practices. These impacts are correctable within the project area. The soils within the project area are partially or predominantly hydric, and wetlands should be easily re-established with minimal grading.

Based on the above qualifications, this project presents an ecologically sound option for compensating for aquatic resource losses and improving the watershed.

SITE PROTECTION INSTRUMENT

A Conservation Easement will be utilized for permanent land protection as part of the mitigation project and a draft of the easement will be shared with the IRT for review. The permanently protected area is depicted in Figure 1 in Appendix A. TNC is coordinating with WCC as the land holder for this project. The conservation easement will be approved by the Corps prior to recordation.

PROPERTY ASSURANCES

Preliminary Title Report

A preliminary title report has been ordered and it shows no severed mineral or oil/gas rights. There is a 30' wide drainage easement along the western stream, but the likelihood that it will be utilized is very remote.

Water Rights

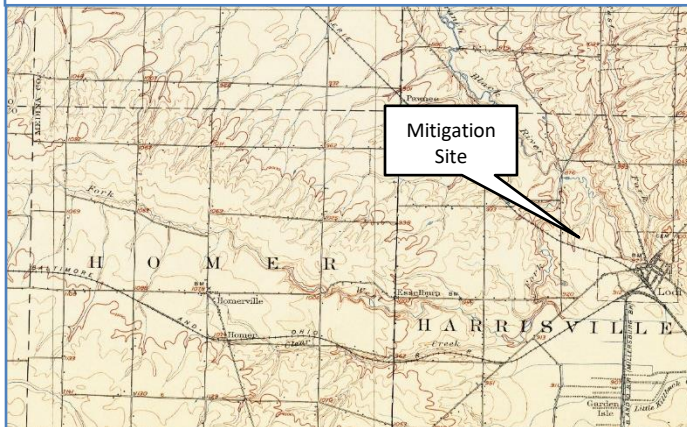
Water rights are intact for the Black River Preserve Mitigation Site.

BASELINE INFORMATION

HISTORIC LAND USE AND IMPACTS

The project area was significantly altered historically to allow for row crop farming practices. The time frame for land alteration started in the early 1800s to current day. These land alterations and activities included logging, grazing, row crop production, and the creation of ditches to improve drainage. These alterations have resulted in altered soil health and greatly changed local hydrology. Current land uses in the project area and the surrounding vicinity can be viewed in Figure 2 (Appendix A).

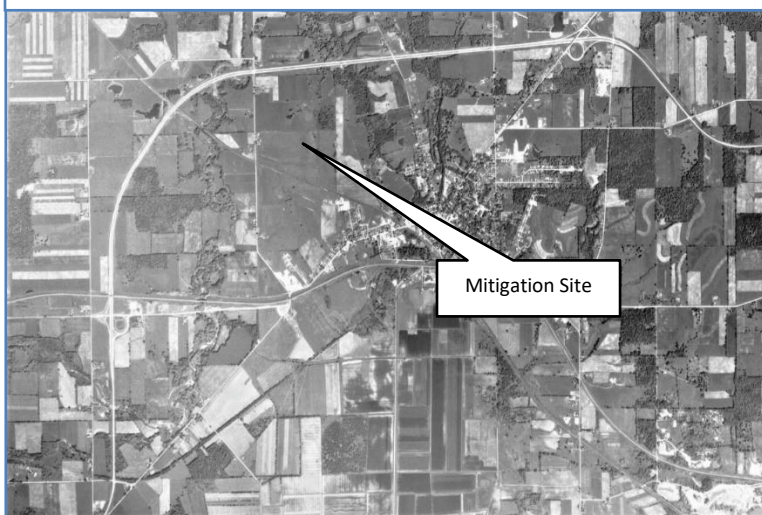
1:62,500 USGS topographic map (Wellington, Ohio; 1904) displaying location of proposed In-Lieu Fee mitigation site



PHYSIOGRAPHY

The mitigation site is located in southwestern Medina County (Appendix A, Figure 1). The site lies within the Low Lime Drift Plain (61c) Level IV Ecoregion. *"The Low Lime Drift Plain ecoregion has a rolling landscape composed of low rounded hills with scattered end moraines and kettles; its terrain is distinct from the unglaciated, wooded, hilly country of Ecoregion 70 and its soils are usually less naturally fertile than the high lime till plains of Ecoregion 55. Urban-industrial activity as well as dairy, livestock, corn, and soybean farming are common; many ridges and lowlands are wooded. The growing season is shorter than that of Ecoregion 61a, and progressively decreases away from Lake Erie."* (Woods, et.al., 2012).

June 2, 1960 USGS aerial photograph of mitigation site showing mostly agricultural land use



The site is located within the floodplain between the West Fork and East Fork of the Black River, very near the confluence of the two. The site is situated partially on

“lacustrine silt, deposited in low velocity water of glacial and slackwater lakes;” “end moraine;” and “outwash, undifferentiated, deposited by meltwater in front of glacial ice” (Ohio Department of Natural Resources-Division of Geological Survey, 2018). The pre-settlement vegetation of the area surrounding the In-Lieu Fee site was primarily Beech Forests and Elm-Ash Swamp Forests (Gordon, 1966).

Based on information derived from the USGS 2016 National Land Cover Dataset (Yang, et.al., 2018), current land use within 3 miles of the proposed In-Lieu Fee site (Appendix A, Figure 2) is dominated by agricultural activities (51.1%) and second growth forest (35.3%).

TOPOGRAPHY

The mitigation site topography is relatively flat with a few low, rounded hills. The site elevation ranges from 892-924 feet above sea level. Figure 1 in Appendix A provides a topographic overview of the site.

SOILS

There are four soil types mapped by the United States Department of Agriculture (USDA) as being present within the study area (Soil Survey Staff, NRCS, accessed 2021). The acreage of each of the mapped soil types and their associated percentage makeup of the site can be found in Appendix A, Figure 3. One of the soil types is classified as being hydric: Wallkill silt loam [Wc]. Two mapped soils are classified as non-hydric with hydric inclusions: Bennington silt loam, 0 to 2 percent slopes [BnA], Bennington silt loam, 2 to 6 percent slopes [BnB]. The remaining soil type is non-hydric: Cardington silt loam, 6 to 12 percent slopes, moderately eroded [CgC2].

TERRESTRIAL RESOURCES

Site visits were conducted on March 5 and 8, 2021 by STONE Environmental Engineering and Science, Inc. (STONE) to observe and collect information for a baseline assessment. The identified terrestrial habitats of the study area are row crop and deciduous forest. The surrounding terrestrial habitats for the project area are agricultural fields and forest (Appendix A, Figures 5 and 6).

AQUATIC RESOURCES

Watershed

The site drains north to the East Fork of the East Black River Watershed (HUC 041100010301). The East Fork has an Ohio EPA Designated Use of Warmwater Habitat (WWH) and is located north of the study area. This sub-watershed of the East Fork changes elevation at an average rate of 10 feet per mile and has a drainage area of approximately 0.57 mi². Main factors that affect watershed resiliency are development,

impervious surfaces, and natural landcover. The sub-watershed is 4.6 percent forested, 19.6 percent developed land, and 8.9 percent impervious surfaces. The watershed overview for the site can be viewed in Figure 4 (Appendix A).

Riverine Resources

STONE delineated the Waters of the US on March 5 and 8, 2021 and performed physical habitat assessments for the streams on site using the Headwater Habitat Evaluation Index (HHEI). Two streams, one perennial and one intermittent, which are unnamed tributaries to the East Fork of the East Black River, were documented within the mitigation site boundaries and total 1,936 linear feet (Appendix A, Figure 5). Table 1 provides a summary of the stream data collected by STONE. Appendix E contains photographs of the streams.

Table 1. Riverine Resources within the Mitigation Site.

| Name | Type | Length (feet) | HHEI Score | PHWH Classification |
|-------------------|--------------|---------------|------------|--|
| Stream 1 (ST-001) | Perennial | 1,207 | 53 | Small drainage warmwater stream/ Class II PHWH |
| Stream 2 (ST-002) | Intermittent | 729 | 30 | Modified small drainage warmwater stream/ Modified Class II PHWH |
| Total | | 1,936 | | |

Wetland Resources

STONE visited the site to delineate its aquatic resources and collect wetland determination data on March 5 and 8, 2021. Table 2 provides a summary of the wetland data collected by STONE and Appendix E contains the wetland delineation reports and associated ORAM data sheets. Of the ten delineated wetlands, four are palustrine emergent wetland (PEM), two are palustrine forested wetlands (PFO), two are combined PEM/PFO, one is palustrine scrub-shrub (PSS), and one is combined PEM/PSS. These wetlands have a total footprint of approximately 5.72 acres (Appendix A, Figure 6). Photographs of the wetlands can be found in Appendix E.

Table 2. Wetland Resources within the Mitigation Site.

| Name | Wetland Community Cowardin Class | Plant Acres | HGM Class | ORAM Score | VIBI Antidegradation Category |
|---------------------|----------------------------------|----------------------------------|--------------|------------|-------------------------------|
| Wetland 1 (WTL-001) | PEM | 0.05 | Depressional | 11.5 | Category 1 |
| Wetland 2 (WTL-002) | PEM/PFO | 2.24 (PEM = 1.42, PFO = 0.82) | Riverine | 36 | Category 2 |

| | | | | | |
|-------------------------|---------|----------------------------------|--------------|------|------------|
| Wetland 3 (WTL-003) | PFO | 0.04 | Depressional | 9 | Category 1 |
| Wetland 4 (WTL-004) | PEM | 0.06 | Depressional | 11.5 | Category 1 |
| Wetland 5 (WTL-005) | PEM | 0.04 | Depressional | 14.5 | Category 1 |
| Wetland 6 (WTL-006) | PEM/PFO | 2.48 (PEM = 1.33, PFO = 1.15) | Riverine | 35.5 | Category 2 |
| Wetland 7 (WTL-007) | PSS | 0.09 | Depressional | 11 | Category 1 |
| Wetland 8 (WTL-008) | PFO | 0.03 | Depressional | 18 | Category 1 |
| Wetland 9 (WTL-009) | PEM/PSS | 0.62 (PEM = 0.37, PSS = 0.25) | Depressional | 39 | Category 2 |
| Wetland 10 (WTL-010) | PEM | 0.07 | Depressional | 20 | Category 1 |
| Total | | 5.72 | | | |

PROPOSED MITIGATION WORK PLAN

*Note – the distances, acreages, and credits are for planning purposes only. They are expected to change based on IRT comments and the final design.

This project proposes to:

Streams

- Restore 2,129 linear feet (LF) of intermittent streams (Mitigation Type 1 – Activity Level 2).

Wetlands

- Re-establish 14.6 acres of forested (PFO) wetlands in areas that have existing hydric soils;
- Rehabilitate 4.9 acres of forested (PFO) wetlands by disrupting tile drains, removing invasive plants and planting native hydrophytes as replacements;
- Re-establish 19.5 acres of upland forest buffer for wetlands;
- Re-establish 10.7 acres of extra upland forest buffer.

Streams

The Ohio EPA report *Biological and Water Quality Study of the Black River Basin, 2012: Ashland, Cuyahoga, Huron, Lorain, and Medina Counties* (2016) identified sources of water quality threats and impacts including: channelization, urbanization, poor instream habitat, excessive sedimentation, riparian habitat removal, poor stormwater

management, and nutrient loading. These sources of impairment have been associated with extensive deforestation and agricultural land use practices.

Some of these causes for habitat degradation would be alleviated through the proposed project. Restoration will involve increasing instream channel habitat, reducing sedimentation from current agricultural land use, improving floodplain connectivity, re-establishing and rehabilitating the riparian area through invasive species treatment, and planting a robust and diverse riparian plant community. The Mitigation Type and Activity levels of restoration as described in the *Guidelines for Stream Mitigation Banking and In-Lieu Fee Programs in Ohio 1.1* (2016) are displayed in Figure 7 in Appendix A.

Wetlands

From a wetland conservation standpoint, re-establishment and rehabilitation of the wetlands on site is highly desirable given that the majority of degradation is caused by current correctable land use activities and hydric soils are present for re-establishment. These activities consist of present and historic land use such as agriculture and reduction of the upland forested buffer. Reed canary grass is present at high densities within many of the existing wetlands, but planned wetland rehabilitation activities will manage the invasive plant problems and improve wetland hydrology through disruption of drainage tiles. Hybrid cattails are also present at low-to-medium densities. These species are not present in the upland areas, which are primarily covered by soybean crops.

Rehabilitated Wetlands

Wetlands to be rehabilitated within the mitigation site are of low quality and primarily occur adjacent to the streams. These wetlands will be rehabilitated through minor soil grading to restore pre-settlement topography, control of invasive plant species, planting of high quality native species, improvements to the hydrological regime through tile disruption and restoration of the eastern stream, and the establishment of adjacent forested upland buffers. Changes to wetland hydrology will be monitored with piezometers, which will be installed at representative locations in the existing wetlands prior to restoration.

Invasive plants within the mitigation site will be treated using a wetland-approved glyphosate herbicide such as Rodeo. Herbicide treatments could require up to two or three consecutive years of repetitive applications to eradicate/significantly reduce the invasive species and their established seed beds. Additionally, the PEM wetland areas will be further rehabilitated by seeding and/or planting native trees and shrubs and plugs of other desirable wetland plants specific to the area.

Re-established Wetland Areas

Re-establishment of wetlands on-site will focus on locations with verified hydric soils. Appendix A, Figure 7 indicates our plan for re-establishment of wetlands. The supporting hydrology for the re-established wetlands will come from precipitation, groundwater, and seasonal flooding events. Because of the conducive topography and soils, wetland conditions should be easily developed with minimal grading and the disruption of any existing field tiles; any required excavation will likely be shallow (0.25-0.5ft in depth). Where grading is needed, the topsoil will be removed, stockpiled for a short time, and reapplied. During the design phase of the project, additional hydric soils and wetland areas on-site will be analyzed and proposed for re-establishment or rehabilitation when appropriate.

The re-established wetland areas will be planted according to the finished grading/topography of the wetland and hydrologic regime appropriate for the proposed species. For emergent areas, a native seed mix will be applied based on the anticipated hydrologic regime of lower levels of standing water and saturation. For the wetter areas experiencing longer periods of inundation, herbaceous plugs adapted to deeper and longer hydrologic regimes will be installed. In addition, high quality, native woody species will be selected for both the wetlands and their buffers. The revegetation will focus on creating vegetative interspersions and diversity typical for wetlands within the watershed and connection of the wetlands and buffers into one large, highly functional ecosystem. The planting plan will be developed during the design phase and submitted with the Draft Amendment.

Annual maintenance will be essential to the success of the re-establishment and rehabilitation of these wetland areas. A comprehensive and accurately funded long-term management plan will be developed for the mitigation site.

Upland Buffer

Forested upland buffer will be re-established around the re-established and rehabilitated wetlands. Extra forested upland buffer (beyond the mandated 100 foot buffer) will also be re-established to slow the surface runoff that would enter the wetlands and provide habitat connectivity between rehabilitated and re-established wetlands for amphibians and other wildlife.

DETERMINATION OF CREDITS

The *Guidelines for Stream Mitigation Banking and In-Lieu Fee Programs in Ohio 1.1* (2016) and *Guidelines for Wetland Mitigation Banking and In-Lieu Fee Programs in Ohio Version 2.0* (2020) were utilized to estimate and determine credits for the proposed

Black River Preserve mitigation project. Although the actual credits generated will be based on the as-built survey and IRT approval, the Guidelines provide general ratios. It is understood that those ratios are as follows:

Streams

- Mitigation Type 1, Level 2 stream restoration can generate ratios up to 1.75:1;

Wetlands

- Wetland re-establishment can generate ratios up to 1:1;
- Wetland rehabilitation can generate ratios up to 1:2;
- Upland buffer re-establishment can generate ratios up to 1:4;
- Extra upland buffer re-establishment or rehabilitation can generate ratios up to 1:10.

Table 3 provides the credit estimates for each of the stream and wetland areas based upon the proposed Mitigation Work Plan.

Table 3: Stream and Wetland Credit Estimates for the Mitigation Work Plan

| Resource Type | Method of Compensation | Acres/LF | Estimated Credit Ratio | Estimated Wetland Credits | Estimated Stream Credits |
|---|---|----------|------------------------|---------------------------|--------------------------|
| Unnamed Intermittent Tributary to East Fork Black River | Type 1, Level 2 | 2,129 ft | 1.75:1 | -- | 3,726 |
| Forested Wetlands (PFO) | Re-establishment | 13.9 ac | 1:1 | 13.9 | -- |
| | Re-establishment (Within the 100ft property buffer) | 0.7 ac | 1:2 | 0.4 | -- |
| | Rehabilitation | 3.5 ac | 1:2 | 1.7 | -- |
| | Rehabilitation (Within the 100ft property buffer) | 1.4 ac | 1:6 | 0.2 | -- |
| Upland Buffer (100ft) | Re-establishment | 19.5 ac | 1:4 | 4.9 | -- |
| Extra Upland Buffer | Re-establishment | 10.7 ac | 1:10 | 1.1 | -- |
| TOTAL: | | | | 22.2 | 3,726 |

CREDIT LEDGER

The Black Rocky Watershed (HUC 04110001) currently has 1,101 stream credits sold with 303 stream credits reserved and 20.0 wetland credit sold with none reserved.

NO NET LOSS - WETLANDS

TNC takes the concept of “no net loss” for wetlands very seriously and welcomes the oversight from the IRT regarding this issue. We rely on the 2008 Mitigation Rule and the Guidelines for Wetland Mitigation Banking in Ohio (Guidelines) to determine credit

ratios that seek to balance permitted impacts and compensatory mitigation and achieve “no net loss.” It is our understanding that the existing crediting ratios for wetland re-establishment, rehabilitation, and preservation have been developed to provide the necessary balance between quantifiable ecological benefit for each activity and the loss of services that occur from unavoidable impacts to wetland resources. As such, our program focuses on identifying and constructing mitigation projects that compensate for the number of wetland credits that are sold within each watershed using a combination of preservation, rehabilitation, and re-establishment projects.

In addition to the requirements outlined in the Mitigation Rule and Wetland Guidelines, TNC is tracking the *acreage* of impacts to wetlands associated with all credit sales within each watershed. This will allow us to ensure compliance with OAC 3745-1-54 (Ohio’s Wetland Antidegradation Rule), which specifies there can be no net loss of acreage or functions associated with wetland impacts. In the Black-Rocky Watershed (HUC 04110001), our In-Lieu Fee program has sold 20.0 wetland credits. These were generated by a total of 10.46 acres of impact. The Black River Preserve In-Lieu Fee Mitigation Project, as currently proposed, will generate 22.2 credits, including the re-establishment of 14.6 acres of wetland habitat. As this amount of re-establishment is larger than the impacts associated with credit sales in this watershed, we feel that is an adequate demonstration that the TNC ILF program is in compliance with both the state and federal no net loss policies within the Black-Rocky.

PERFORMANCE STANDARDS

The long-term goals of this project are to develop and manage a site that contains high quality aquatic and wetland resources and buffers. As the Guidelines for Stream Mitigation Banking and In-Lieu Fee Programs in Ohio states, performance standards should be based on specific measurable metrics using standards in current use in Ohio at the time the site is approved.

Streams:

1. Restored stream channels are vertically stable, connected to their floodplains, and are in dynamic equilibrium.
2. Stream banks are laterally stable showing only insignificant change from the as-built dimensions and the relocated stream channel will be stable, and the stream meets the criteria for a Class II primary headwater stream by the end of the monitoring period.
3. Pebble counts demonstrate appropriate substrate composition.
4. Appropriate pool/riffle spacing.

5. Biological and habitat standards such as QHEI, IBI, and EPT Taxa may also be appropriate, but can only be developed and proposed once more assessments are performed at the site and the engineering design plans are developed.

Re-established and Rehabilitated Wetlands:

1. Wetlands will meet all wetland criteria pursuant to the 1987 Corps of Engineers Wetland Delineation Manual, the relevant regional supplement, and any subsequent versions/updates thereto. In addition to delineating exterior wetland boundaries, non-wetland features (e.g., deepwater habitat, vegetated shallows, streams, and uplands) will be identified.
2. The wetlands must be inundated (flooded or ponded) or the water table is ≤ 12 inches below the soil surface for ≥ 14 consecutive days during the growing season at a minimum frequency of 5 years in 10 ($\geq 50\%$ probability). Any combination of inundation or shallow water table is acceptable in meeting the 14-day minimum requirement. Monitoring will be informed by the U.S. Army Corps of Engineers “Technical Standard for Water-Table Monitoring of Potential Wetland Sites” (ERDC TN-WRAP-05-2, June 2005, <https://erdc-library.erdc.dren.mil/xmlui/bitstream/handle/11681/3552/TN-WRAP-05-2.pdf?sequence=1&isAllowed=y>). Piezometers will be installed and maintained according to manufacturer recommendations. Short-term monitoring data may be used to address the frequency requirement if the normality of rainfall occurring prior to and during the monitoring period each year is considered.
3. The wetlands will contain a minimum of 75% relative coverage of native perennial facultative (FAC), facultative wetland (FACW) and obligate wetland (OBL) plant species.
4. Any wetland or upland areas will have a minimum 80% relative cover native plant species by the end of the monitoring period and less than 5% relative cover of all non-Typha invasive plant species listed in the table below. Due to the difficulty of distinguishing the three species of cattails (*Typha latifolia*, *Typha angustifolia*, and *Typha x glauca*), as well as the likelihood that at least one of these will be present in many types of Ohio wetlands, the total relative cover of all invasive species, including *Typha spp.*, will be less than or equal to 10%. Beginning during the second monitoring event, the Ohio IRT will consider a non-native or cryptogenic species to be invasive if it comprises 10% or more relative cover of the mitigation site. Plants that meet this definition will be considered invasive for the remainder of site management. In order to demonstrate these goals are being met, for each VIBI-FQ 20m x 50m plot, percent relative cover of non-native or cryptogenic species must be calculated. Additionally, the required ILF site map will include all areas which exceed 0.1

acre that are dominated by invasive, non-native, or cryptogenic species (i.e., >50% cover based on visual observation). VIBI-FQ field data used to demonstrate whether or not this goal is being met should use the updated Excel scoring sheets developed by the Ohio EPA to calculate these parameters (http://epa.ohio.gov/Portals/35/401/VIBI_DATA_TEMPLATE_v2016-03-18.zip).

INVASIVE PLANT LIST FOR OHIO MITIGATION

| Scientific Name | Common Name | Scientific Name | Common Name |
|---------------------------------|----------------------------|------------------------------------|-------------------------|
| <i>Acer platanoides</i> | Norway Maple | <i>Lonicera maackii</i> | Amur Honeysuckle |
| <i>Ailanthus altissima</i> | Tree-of-Heaven | <i>Lonicera morrowii</i> | Morrow Honeysuckle |
| <i>Alliaria petiolata</i> | Garlic Mustard | <i>Lythrum salicaria</i> | Purple Loosestrife |
| <i>Alnus glutinosa</i> | European Alder | <i>Maclura pomifera</i> | Osage Orange |
| <i>Berberis thunbergii</i> | Japanese Barberry | <i>Microstegium vimineum</i> | Japanese Stilt Grass |
| <i>Butomus umbellatus</i> | Flowering-rush | <i>Myriophyllum spicatum</i> | Eurasian Water-milfoil |
| <i>Catalpa speciosa</i> | Northern Catalpa | <i>Najas minor</i> | Lesser Naiad |
| <i>Celastrus orbiculatus</i> | Asian Bittersweet | <i>Nasturtium officinale</i> | Watercress |
| <i>Cirsium arvense</i> | Canada Thistle | <i>Phalaris arundinacea</i> | Reed Canary Grass |
| <i>Conium maculatum</i> | Poison Hemlock | <i>Phragmites australis</i> | Common Reed |
| <i>Coronilla varia</i> | Crown Vetch | <i>Polygonum cuspidatum</i> | Japanese Knotweed |
| <i>Dipsacus fullonum</i> | Common Teasel | <i>Potamogeton crispus</i> | Curly Pondweed |
| <i>Dipsacus laciniatus</i> | Cut-leaved Teasel | <i>Pyrus calleryana</i> | Bradford Pear |
| <i>Elaeagnus angustifolia</i> | Russian Olive | <i>Ranunculus ficaria</i> | Lesser Celandine |
| <i>Elaeagnus umbellata</i> | Autumn Olive | <i>Rhamnus cathartica</i> | Common Buckthorn |
| <i>Epilobium hirsutum</i> | Hairy Willow-herb | <i>Rhamnus frangula</i> | Glossy Buckthorn |
| <i>Epilobium parviflorum</i> | Small-flowered Willow-herb | <i>Rosa multiflora</i> | Multiflora Rose |
| <i>Euonymus alatus</i> | Winged Euonymus | <i>Schoenoplectus mucronatus</i> | Bog Bulrush |
| <i>Euonymus fortunei</i> | Wintercreeper | <i>Sorghum halepense</i> | Johnson Grass |
| <i>Hydrocharis morsus-ranae</i> | Common Frog-bit | <i>Typha angustifolia</i> | Narrow-Leaved Cattail |
| <i>Iris pseudacorus</i> | Yellow Flag | <i>Typha x glauca</i> | Hybrid Cattail |
| <i>Ligustrum vulgare</i> | Common Privet | <i>Viburnum opulus var. opulus</i> | European Cranberry-Bush |
| <i>Lonicera japonica</i> | Japanese Honeysuckle | <i>Vinca minor</i> | Periwinkle |

5. Re-established wetlands will meet or exceed a VIBI-FQ score of 40 by the end of the monitoring period.

6. Rehabilitated wetlands will meet a VIBI-FQ score of 40 or increase VIBI-FQ score 10 points from the baseline score, whichever is higher. For wetlands containing 80%

non-native or cryptogenic species, or sites which have historical agricultural use up to the present resulting in little or no hydrophytic vegetation, baseline VIBI-FQ may not be required. The VIBI-FQ goal will be 40 for these wetlands.

7. A minimum of 400 native, live and healthy (disease and pest free) woody plants per acre (of which at least 200 are tree species at least 3 inches in diameter at breast height ([DBH] [i.e. 55 inches])), will be present at the end of the monitoring period. If all trees are not at ≥ 3 " DBH, other evidence may be presented that proves the trees are on a trajectory to meeting this standard. For example, 200 trees/acre are at least 6 feet in height. These woody plants will be distributed evenly throughout all areas of the ILF site targeted for forested wetland credits.

8. Deepwater aquatic habitats and/or vegetated shallows will only be credited where they equal 10% or less of the total wetland reestablishment and establishment areas on the site and are part of a well-integrated complex. Deepwater aquatic habitats and vegetated shallows do not meet Corps the definition of wetland and will thereby will not be credited the same as wetlands. Deepwater aquatic habitat is defined as any open water area that is either a) permanently inundated at mean annual water depths >6.6 ft, lacks soil, and/or is either unvegetated or supports only floating or submersed macrophytes, or b) permanently inundated areas ≤ 6.6 ft in depth that do not support rooted-emergent or woody plant species. Areas ≤ 6.6 ft mean annual depth that support only submergent aquatic plants are vegetated shallows, not wetlands. Vegetated shallows and/or deep-water habitats over 0.1 acre in size will be mapped in each monitoring report/delineation.

Upland and Riparian Buffer Re-establishment:

1. A minimum of 400 native, live and healthy (disease and pest free) woody plants per acre (of which at least 200 are tree species) must be present at the end of the monitoring period. The reestablished buffer will contain a minimum of 90% relative coverage of native plant species. These woody plants will be distributed evenly throughout all areas of the ILF site targeted for forested upland credits.
2. A minimum of 200 native trees per acre that are ≥ 3 " DBH are expected at the end of the monitoring period. If all trees are not at ≥ 3 " DBH, other evidence may be presented that proves the trees are on a trajectory to meeting this standard. For example, 200 trees/acre are at least 6 feet in height.
3. The re-established buffer will achieve a minimum VIBI-FQ score of 40.

MONITORING REQUIREMENTS

Monitoring is required to determine if the project is meeting its performance standards and if additional measures are necessary to ensure that the compensatory mitigation project is accomplishing its goals (33 CFR §332.6; RGL 08-03). The monitoring will evaluate wetlands, streams, and associated upland buffers. Monitoring will take place for a period of ten years following construction of the mitigation project, and reports will be submitted annually.

As stated in 33 CFR §332.6(b), the District Engineer, in consultation with the IRT, may reduce or waive the remaining monitoring requirements upon a determination that the compensatory mitigation project has met its performance standards, or extend the monitoring period upon a determination that performance standards have not been met, are not on track to be met, or remediation or adaptive management measures are required. Regulatory Guidance Letter (RGL) 08-03 provides guidance on minimum monitoring requirements for compensatory mitigation projects, which is applicable to ILF projects. RGL 08-03 states, “If a compensatory mitigation project has met its performance standards in less than five (5) years, the monitoring period length can be reduced, if there are at least two (2) consecutive monitoring reports that demonstrate that success.”

After construction, an as-built report will be submitted to members of the IRT by December 31st of the year of construction and seeding/planting. The as-built shall include photographs, baseline conditions, as-built drawings that describe the actual constructed features with 0.5’ contours, estimates of relative cover of invasive plant species, and description of any deviation from the plan. Thereafter, monitoring reports will be submitted by December 31st of each monitoring year. The schedule for submitting monitoring reports may be adjusted based on site conditions or to facilitate credit releases. Schedule adjustment requests will be coordinated through the District Engineer in consultation with the IRT and do not require modification of the Plan or ILF Instrument.

Photograph monitoring stakes will be installed at appropriate locations within the mitigation area following construction. The actual location and number of stakes will be dependent on the as-built conditions. At a minimum, each mapped habitat type will have a photo station with photos taken in each cardinal direction. The stakes will be of an ultraviolet (UV), light-resistant polyvinyl chloride (PVC) material and will be identified with unique numbers. Photo documentation of site conditions will be taken at these locations and will include the stake and stake number. Subsequent photographs will be taken in the same area and with the same directions of view.

Wetlands delineations will be conducted in Years 1, 3, 5, 7, 9, and 10 using the protocols in the 1987 *Corps of Engineers Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (U.S. Army Corps of Engineers 2010), or subsequent versions/updates, including the use of field forms.

Vegetation monitoring protocols will follow *the Integrated Wetlands Assessment Program: Part 9: Field Manual for the Vegetation Index of Biotic Integrity for Wetlands v. 1.5* (Mack and Gara, 2015). The Vegetation Index of Biotic Integrity – Floristic Quality (VIBI-FQ) is an intensive assessment methodology developed by Ohio EPA, which is used to monitor the ecological condition of mitigation sites. Focus plots will be in the re-established wetlands and riparian buffer areas. VIBI-FQ scores will be calculated using the data gathered from the focus plots. The focus plot(s) will be monitored in Years 3, 5, 7, and 10. In addition to generating VIBI-FQ scores, data collected will be used to calculate percent relative cover of native plants and native perennial hydrophytes, as well as stem counts of woody vegetation.

Monitoring reports will include a narrative that summarizes project conditions; supporting data such as plans, maps and photographs to illustrate project conditions; monitoring results from functional, condition or other assessments that compare the status of the developing project to performance standards; data forms; a description of any maintenance and adaptive management activities that occurred; and any recommendations for adaptive management or remedial measures at the project. A summary of the parameters to be monitored is provided in Table 4.

Table 4: Monitoring Plan and Schedule

Streams

| Monitoring Parameter | Monitoring Methodology | Year | | | | | | | | | | | |
|-----------------------------------|-------------------------------|------|---|---|---|---|---|---|---|---|---|----|--|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| As-Built | | X | | | | | | | | | | | |
| Monitoring Report | | | X | X | X | X | X | X | X | X | X | X | |
| Photography | Fixed photo monitoring points | X | X | X | X | X | X | X | X | X | X | X | |
| Cross sections – Depths and flows | Representative elevations | X | X | | X | | | | | | | X | |
| Longitudinal profiles | Baseline Elevation Survey | X | X | | X | | | | | | | X | |
| Streambank stability | Pfankuch Elevations | | X | | X | | X | | X | | | X | |
| Habitat Assessment | QHEI/HHEI | | X | | X | | X | | X | | | X | |
| Substrate Sampling | Pebble Counts | | X | | X | | X | | X | | | X | |

Riparian Buffers, Wetland Buffers, and Wetlands

| Monitoring Parameter | Monitoring Methodology | Year | | | | | | | | | | | |
|----------------------------|---|------|---|---|---|---|---|---|---|---|---|----|--|
| | | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| As-Built Report | | X | | | | | | | | | | | |
| Monitoring Report | | | X | X | X | X | X | X | X | X | X | X | |
| Photography | Fixed photo monitoring points | | X | X | X | X | X | X | X | X | X | X | |
| Hydrology | Data loggers, staff gauges, reference structures | | X | X | X | X | X | X | X | X | X | X | |
| Wetland acreage | Delineation | | X | | X | | X | | X | | X | X | |
| Detailed Site Mapping | | | X | | X | | X | | X | | X | X | |
| *Birds/amphibians/reptiles | Observational/Detail ed | | X | | X | | X | | X | | X | X | |
| Habitat Assessments | Woody stem counts, native species % relative cover, native perennial hydrophytes relative cover | | X | | X | | X | | X | | | X | |
| Vegetation | VIBI-FQ | | | | X | | X | | X | | | X | |
| Soils | Vertical Profiles | | X | | X | | X | | X | | | X | |

* Additional detailed monitoring of birds, amphibians, and/or reptiles may occur if early observational evidence suggests usage of restored habitat by sensitive species or if a main goal of the project is to develop habitat for these species.

CREDIT RELEASE SCHEDULE

As the project meets the interim goals outlined below, the associated credits will be released. These released credits will be used to fulfill any advance credits that have been already provided within the project's service area before any remaining released credits can be sold. The proposed credit release schedule for the Black River Preserve project is below. Tables 5 and 6, on the following page, summarize the schedule and provide specific credit amounts for each milestone, which are tied to acres/linear feet on the site that meet the performance standards outlined in this mitigation plan. Monitoring periods may be shortened if performance criteria are met before the end of the monitoring period or extended if not all performance standards have been met. However, TNC acknowledges it is unlikely that the forested wetland monitoring period will be reduced/waived due to the time it takes to demonstrate clear ecological success.

Table 5: Stream Credit Release Schedule.

| Mitigation Milestone | Released Credits | | Cumulative Credits |
|---|-------------------|-------------------|--------------------|
| | Percentage | Number of Credits | |
| Approval of final plans, financial assurances are in place, and the Site Protection Instrument recorded | 10% | 373 | 373 |
| Completion of construction, all plantings, and submittal of as-built site drawings to the satisfaction of the Corps | 20% | 746 | 1,119 |
| Submission of 1 st year monitoring report, 1 st year criteria met, and site inspection by the IRT | 15% | 559 | 1,678 |
| Submission of 3 rd year monitoring report, 3 rd year criteria met, and site inspection by the IRT | 10% | 373 | 2,051 |
| Submission of 5 th year monitoring report, 5 th year criteria met, and site inspection by the IRT | 10% | 373 | 2,424 |
| Submission of 7 th year monitoring report, 7 th year criteria met, and site inspection by the IRT | 10% | 373 | 2,797 |
| Submission of 10 th year monitoring report, all performance standards met, and site inspection by the IRT | Remaining Credits | 929 | 3,726 |

Table 6: Wetland Credit Release Schedule.

| | Re-establishment | | Rehabilitation | | Cumulative Credits |
|--------------------------|------------------|------------------|----------------|------------------|--------------------|
| | Percentage | Released Credits | Percentage | Released Credits | |
| Initial Credit Release | 30% | 6.09 | 15% | 0.285 | 6.375 |
| Interim Credit Release 1 | 15% | 3.045 | 15% | 0.285 | 9.705 |
| Interim Credit Release 2 | 15% | 3.045 | 30% | 0.570 | 13.320 |
| Interim Credit Release 3 | 15% | 3.045 | 15% | 0.285 | 16.650 |
| Final Credit Release | 25% | 5.075 | 25% | 0.475 | 22.200 |

Stream Credit Release Criteria:

- Initial Release: 10% of potential credits.
 - Approval of Instrument Amendment/Mitigation Plan
 - Approval of the final detailed stream design and planting plans
 - Financial assurances in place
 - Recording of long-term protection instrument
- Completion of Construction and Plantings: 20% of potential credits
 - All in-stream construction complete and inspected
 - All plantings complete and inspected
 - Submittal of as-built site drawings and approval by the Corps
- First Year Monitoring: 15% potential credits
 - Submission of Monitoring Report (must have at least one documented bankfull event)
 - Success evaluated by:

- All streams showing stability of in-stream pattern, streambanks, profile and dimension, and appropriate benthic substrates as documented by re-survey of the fixed cross-section and monitoring points;
 - All streams tending toward final performance standards;
 - Riparian Buffer: visual evidence of riparian buffers containing the appropriate target species in composition, diversity and density.
- Site inspection by the Corps/IRT
- Third Year Monitoring: 10% potential credits
 - Submission of Monitoring Report (must have at least one documented bankfull event following second year monitoring)
 - Success evaluated by:
 - All streams showing stability of in-stream pattern, streambanks, profile and dimension, and appropriate benthic substrates as documented by re-survey of the fixed cross-section and monitoring points;
 - All streams tending toward final performance standards;
 - Riparian Buffer: visual evidence of riparian buffers containing a positive trend in target species in composition, diversity and density.
 - Site inspection by Corps/IRT
- Fifth Year Monitoring: 10% of potential credits
 - Submission of Monitoring Report (must have at least two documented bankfull events following second year monitoring)
 - Success evaluated by:
 - All streams showing stability of in-stream pattern, streambanks, profile and dimension, and appropriate benthic substrates as documented by re-survey of the fixed cross-section and monitoring points;
 - All streams tending toward final performance standards;
 - Riparian Buffer: visual evidence of riparian buffers containing a minimum of three years of positive growth of species. Positive trend in target species in composition, diversity and density towards achieving success criteria.
 - Site inspection by Corps/IRT
- Seventh Year Monitoring: 10% of potential credits
 - Submission of Monitoring Report (must have at least two documented bankfull events following second year monitoring)
 - Success evaluated by:
 - All streams showing stability of in-stream pattern, streambanks, profile and dimension, and appropriate benthic substrates as documented by re-survey of the fixed cross-section and monitoring points;
 - All streams tending toward final performance standards;
 - Riparian Buffer: visual evidence of riparian buffers containing a minimum of five years of positive growth of species. Positive trend

in target species in composition, diversity and density towards achieving success criteria.

- Site inspection by Corps/IRT
- The Final Release of Credits: The final 25% of the total stream credits may be released once the final monitoring report has been submitted and evaluated by the IRT. This final release is contingent on the site meeting all performance goals.

Wetland Credit Release Criteria:

The First Release of Credits: An initial release of a percentage of total credits projected at ILF project site may occur, provided the following conditions are satisfied:

- The instrument and mitigation plan have been approved (signed by the sponsor and the Corps). Other Ohio IRT member agencies may sign to approve the instrument and mitigation plan for use under their respective programs;
- The ILF project site has been secured through an access or land use agreement and the site protection instrument has been recorded;
- Appropriate financial assurances have been established; and
- Any other requirements determined to be necessary by the Corps have been fulfilled (see 33 CFR 332.8(m)).

Up to 30% of the total anticipated re-establishment credits and up to 15% of the total anticipated rehabilitation credits will be released once the conditions for the first release of credits are satisfied. Construction, including all proposed initial plantings, must be completed within one year of the initial release. In order to assure the integrity of the final ILF plan, no construction activities shall commence prior to the signing of the instrument, which indicates the plan is approved by the IRT. If construction does occur on any part of the plan prior to signing, the instrument will not be effective, and no credits will be released, until the IRT certifies in writing that such construction is in compliance with the final plan.

Additional Credit Releases: Additional credits may be released at any time following the 1st post-construction full growing season, in an amount up to the 25% final release holdback, when interim and/or final performance standards specified in the signed instrument are being met. The ILF project will be evaluated as a whole when determining credit release eligibility. Credits generated will be based on the delineated resources on-site present at the time the release is requested by the sponsor. If the ILF site is developing as desired, but does not meet these final goals, the sponsor may request interim credit releases, according to the following schedule:

Interim Credit Release 1: Following the successful construction of the wetland habitat, up to 15% of the total anticipated re-establishment and rehabilitation credits may be released if all of the following conditions are met:

- All wetland mitigation areas must meet wetland criteria based on a recent delineation verified by the Corps;

- The wetland areas are inundated (flooded or ponded) or the water table is ≤ 12 inches below the soil surface for ≥ 14 consecutive days for two successive growing seasons (based on hydrologic sampling);
- At least 80% of the wetland areas are covered with hydrophytic vegetation;
- These same wetland areas have less than or equal to 15% relative cover of invasive plant species; and
- For all forested wetland and upland buffer areas, it can be demonstrated that a minimum of 200 native, live and healthy (disease and pest free) woody plants per acre (of which at least 100 are tree species) are present following initial planting.

Interim Credit Release 2: If all necessary requirements described above are still met, up to 15% of the total anticipated re-establishment credits and 30% of the total anticipated rehabilitation credits may be requested for release if all of the following conditions are met:

- The project site has 70% relative cover of native plant species;
- The project site has less than or equal to 12.5% relative cover of invasive plant species;
- Established or re-established wetland areas meet an interim VIBI-FQ score of 30;
- Rehabilitation or enhancement wetland areas meet interim VIBI-FQ score of 30 or an increase of 5 points, as applicable; and
- For all forested wetland and upland buffer areas, it can be demonstrated that a minimum of 300 native, live and healthy (disease and pest free) woody plants per acre (of which at least 150 are tree species) are present following initial planting, and the temporal photographic sequence indicates the site is maturing and a canopy is becoming established.

Interim Credit Release 3: If all necessary requirements described above are still met, up to 15% of the total anticipated re-establishment and rehabilitation credits may be requested for release if all of the following conditions are met:

- The wetland areas are inundated (flooded or ponded) or the water table is ≤ 12 inches below the soil surface for ≥ 14 consecutive days for four growing seasons (based on hydrologic sampling);
- The project site has 75% total relative cover of native species;
- The project site has less than or equal to 10% relative cover of invasive species. This can consist of less than or equal to 5% relative cover of all non-Typha invasive plant species, but not more than 10% total relative cover of invasive plant species including Typha species;
- The same wetland areas have at least 65% relative cover of native perennial hydrophytes (FAC, FACW, OBL);
- The established or re-established wetland areas meet an interim VIBI-FQ score of 35;
- Rehabilitation or enhancement wetland areas meet interim VIBI-FQ score of 35 or an increase of 7 points, as applicable; and
- For all forested wetland and upland buffer areas, it can be demonstrated that a minimum of 400 native, live and healthy (disease and pest free) woody plants per acre (of which at least 200 are tree species), are present and healthy following

initial planting, and the temporal photographic sequence indicates that site is maturing and a canopy is establishing.

The Final Release of Credits: A minimum of 25% of the total reestablishment and rehabilitation credits at a site should be withheld until the final monitoring report has been submitted and evaluated by the IRT. If all performance standards have been met, and any forested wetlands present within the ILF project site have been clearly shown to be developing into a successful forested ecosystem (i.e., trees and shrubs are alive, healthy, and present in the numbers and diversity described above in Section 8), the final 25% of credits may be released. Credits will not be released until a final delineation and a final monitoring report demonstrating full success acceptable to the Corps has been submitted and approved. The Corps will consult with the IRT regarding the final credit release. Monitoring periods may be shortened if performance standards are met before the end of the monitoring period or extended if all performance standards have not been met. See 33 CFR 332.6(b) for further information.

ADAPTIVE MANAGEMENT PLAN

In addition to the above monitoring, the adaptive management plan will include an annual inspection form to be filled out and included in the monitoring reports. The information gained from the annual monitoring plan will provide a means of early identification of potential problems with the mitigation project such as low levels of plant cover species, excessive streambank erosion, or encroachment activities from adjacent property owners. The success of the project will be evaluated each year during the monitoring site visits. If the goals of the project are not being achieved or on a trajectory of being achieved, then appropriate steps will be taken to address these problems. All actions will be conducted in consultation with the IRT.

A more robust adaptive management plan will be provided in the Draft Amendment submittal and include:

- a. Project Background: state the project objectives, performance standards, and any quality assurance and quality control measures developed to preemptively address challenges/changes to the mitigation site.
- b. Responsible Party: identify the party or parties responsible for implementing the AMP.
- c. Challenges: identify the potential challenges/changes that pose a risk to the mitigation site success.
- d. Monitoring: describe the monitoring schedule for identification of potential challenges/changes.
- e. Problem Identification: discuss how potential challenges/changes will be identified. Explain how the monitoring data will be used for interpretation and

reporting. Discuss how the site is not meeting the performance criteria and why it would not likely meet the performance criteria unless corrective action is taken.

- f. Corrective Action: identify specific and measurable steps that will be taken to correct identified problems (see c above), as well as time frame for implementing and monitoring the corrective actions. Additional steps to refine corrective actions should also be discussed.

PROPOSED MAINTENANCE PLAN

In addition to the monitoring plan and adaptive management plan, the maintenance plan will include recommendations following the annual inspection. The recommendations will be included in the monitoring reports. The annual monitoring and additional site visits will be used to determine the need for corrective actions such as stream bank repair, planting of riparian vegetation, or invasive plant species control. If any corrective actions are necessary, they will be addressed within 6 months of first observation.

The information gained from the annual monitoring report will provide a means of early identification of potential problems with the mitigation project. The success of the project will be evaluated each year during the monitoring site visits. If the goals of the project are not being achieved or on a trajectory of being achieved, then appropriate steps will be taken to address these problems. All actions will be conducted in consultation with the IRT.

These steps may include:

- Additional plantings implemented to ensure attainment of diversity/quality/cover mitigation goals.
- Annual herbicide treatments of invasive, non-native vegetation, and as needed.
- Maintenance of instream structures.

Cost estimates for this work shall be included in the Draft Amendment budget.

LONG-TERM MANAGEMENT PLAN

As the OMP Instrument states, a long-term management plan must be developed for each ILF mitigation project and included in or referenced by the Mitigation Plan.

The Long-Term Management Plan will include a description of long-term management needs, the responsible party, routine maintenance items, annual cost estimates, and details regarding the identity of the non-wasting endowment that will be used to meet

those needs. The Corps will be notified if there are any changes to the long-term manager or long-term management plan.

A draft of the Long-Term Management Plan shall be provided in the Draft Amendment and include, at a minimum, the following provisions:

1. *Maintenance of the condition of structural elements and facilities of the site such as signage, fencing, and roads. The Long-Term Management Plan will include provisions to maintain and repair these improvements as necessary to achieve the objectives of the Mitigation Project and comply with the provisions of the real estate instrument providing protection to the site.*
2. *Improvements developed for restoration purposes such as access roads, berms or water control structures that are no longer needed to facilitate or protect the ecological function of the site may be removed or abandoned if consistent with the terms and conditions of the recorded protection document.*
3. *Allowance of access to the site by the IRT.*

FINANCIAL ASSURANCES

The project will have several financial assurances in place to help ensure a high level of confidence that the mitigation will be successfully completed. The financial assurances will include:

- *Performance Bonds* – The construction contractor will be providing a performance bond which will ensure the completion of construction activities.
- *Project Contingency Fund* – An amount equal to 5% of the projected construction costs will be set aside and placed into a Project Contingency account. Funds from this subaccount will be used to cover unanticipated costs which may arise during the implementation of the project. Once the Mitigation Site has closed, the funds in this subaccount will be released and will go into the long-term management endowment, if needed, or otherwise will be used on other mitigation projects in the same primary service area.
- *Program Contingency Fund* – 5% of all credit sales are paid into a Program Contingency Fund account. This account can be used to fund unanticipated program or project expenses not covered by the Project Contingency Fund (such as catastrophic events which occur after the project contingency fund has been released). Additionally, the funds can be used for management or maintenance costs after site closure for stream repairs or invasive plant control deemed necessary for project success.

- *2-Year Warranty* – The Contractor will be required to guarantee all Work performed under their contract against defective materials or workmanship for a period of two (2) years. The Contractor at Contractor’s cost will remedy any defects appearing within that time period and pay for any resulting damage.
- *Long-Term Endowment* – TNC will set aside funding for long-term management of the Property in accordance with the long-term management plan that will be included in the Black River Preserve Draft Amendment. Once the Project receives its final approval from the IRT, the amount specified in the long-term management plan will be added to the OMP long-term management endowment, which is a pooled endowment fund to be used to perform long-term management on all OMP projects around the state.

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LIST OF ACRONYMS AND ABBREVIATIONS

| | |
|----------|---|
| AC | Acre |
| AMSL | Above Mean Sea Level |
| Corps | United States Army Corps of Engineers |
| CPF | Compensation Planning Framework |
| HHEI | Headwater Habitat Evaluation Index |
| HUC | Hydrologic Unit Code |
| LF | Linear Feet |
| NPS | National Park Service |
| NRCS | Natural Resource Conservation Service |
| NWI | National Wetland Inventory |
| Ohio EPA | Ohio Environmental Protection Agency |
| OHWM | Ordinary High Water Mark |
| OMP | The Nature Conservancy's Ohio Mitigation Program |
| ORC | Ohio Revised Code |
| PEM | Palustrine Emergent Wetland |
| PFO | Palustrine Forested Wetland |
| PSS | Palustrine Scrub-Shrub Wetland |
| QHEI | Qualitative Habitat Evaluation Index |
| STONE | STONE Environmental Engineering and Science, Inc. |
| TNC | The Nature Conservancy |
| USACE | United States Army Corps of Engineers |
| VIBI | Vegetation Index of Biotic Integrity |

APPENDIX A

Figures

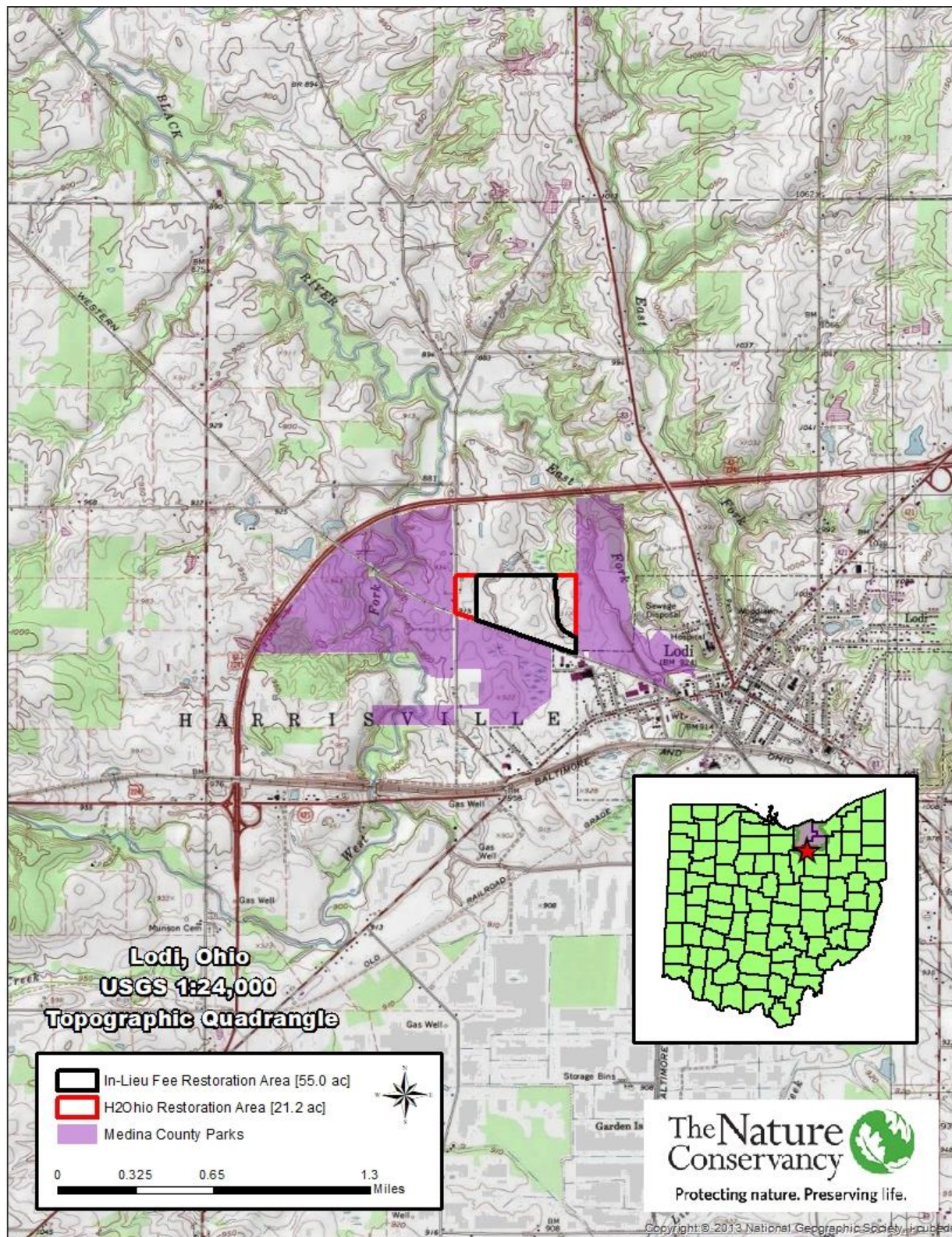


Figure 1. Black River Preserve In-Lieu Fee Project Location Map

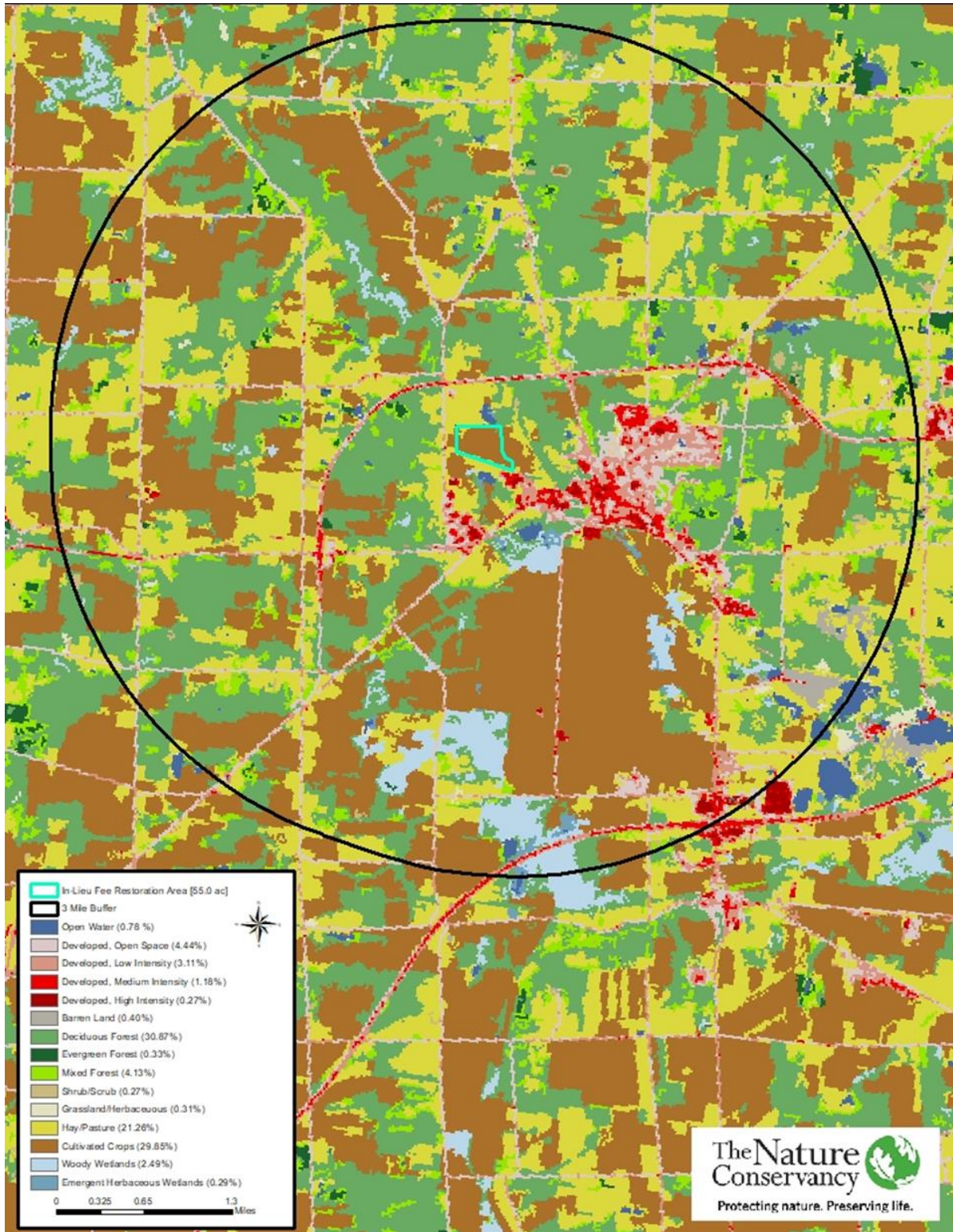


Figure 2. Black River Preserve In-Lieu Fee Project Vicinity (3-mile radius) Land Use Map

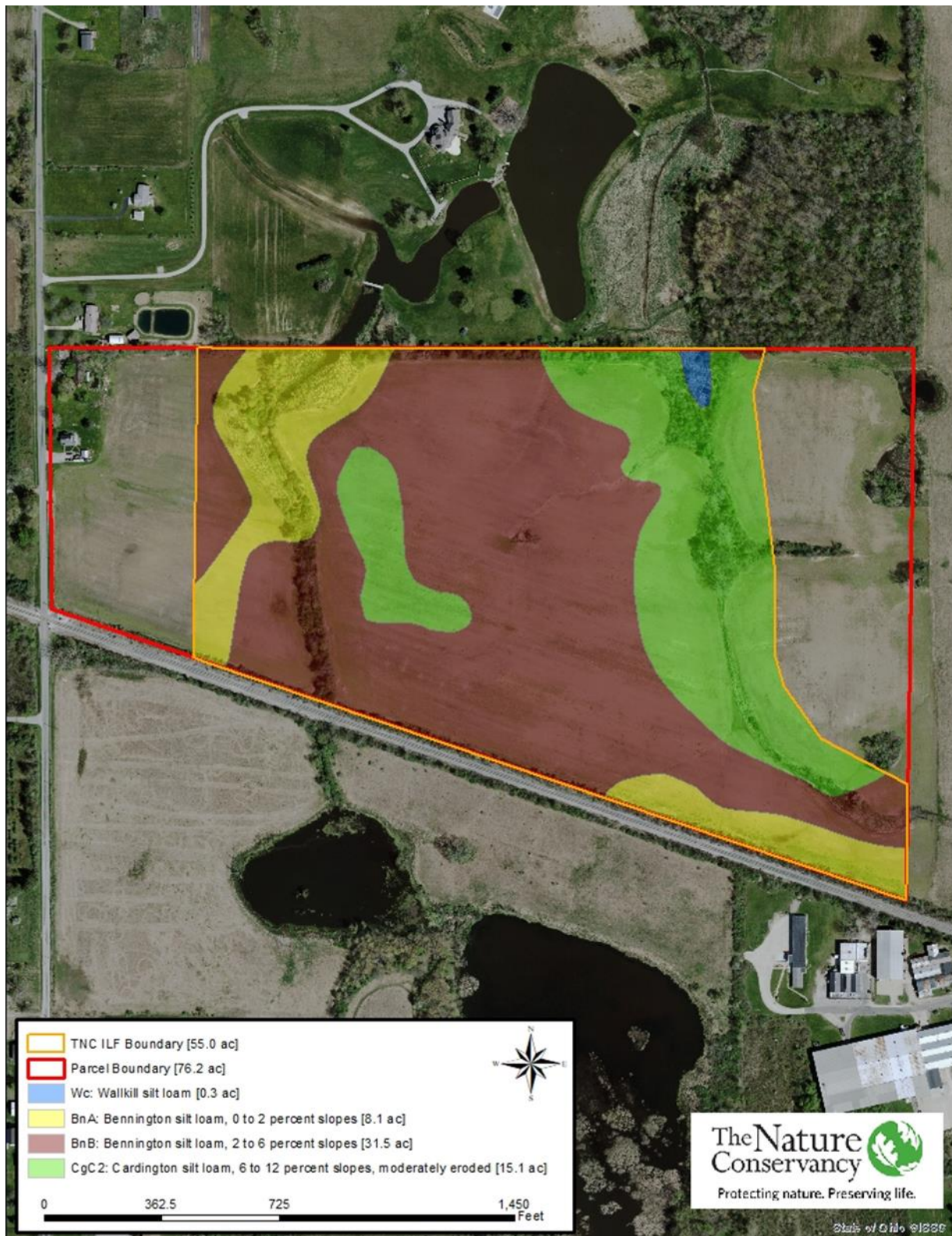


Figure 3. Black River Preserve In-Lieu Fee Project Soils Resources Map

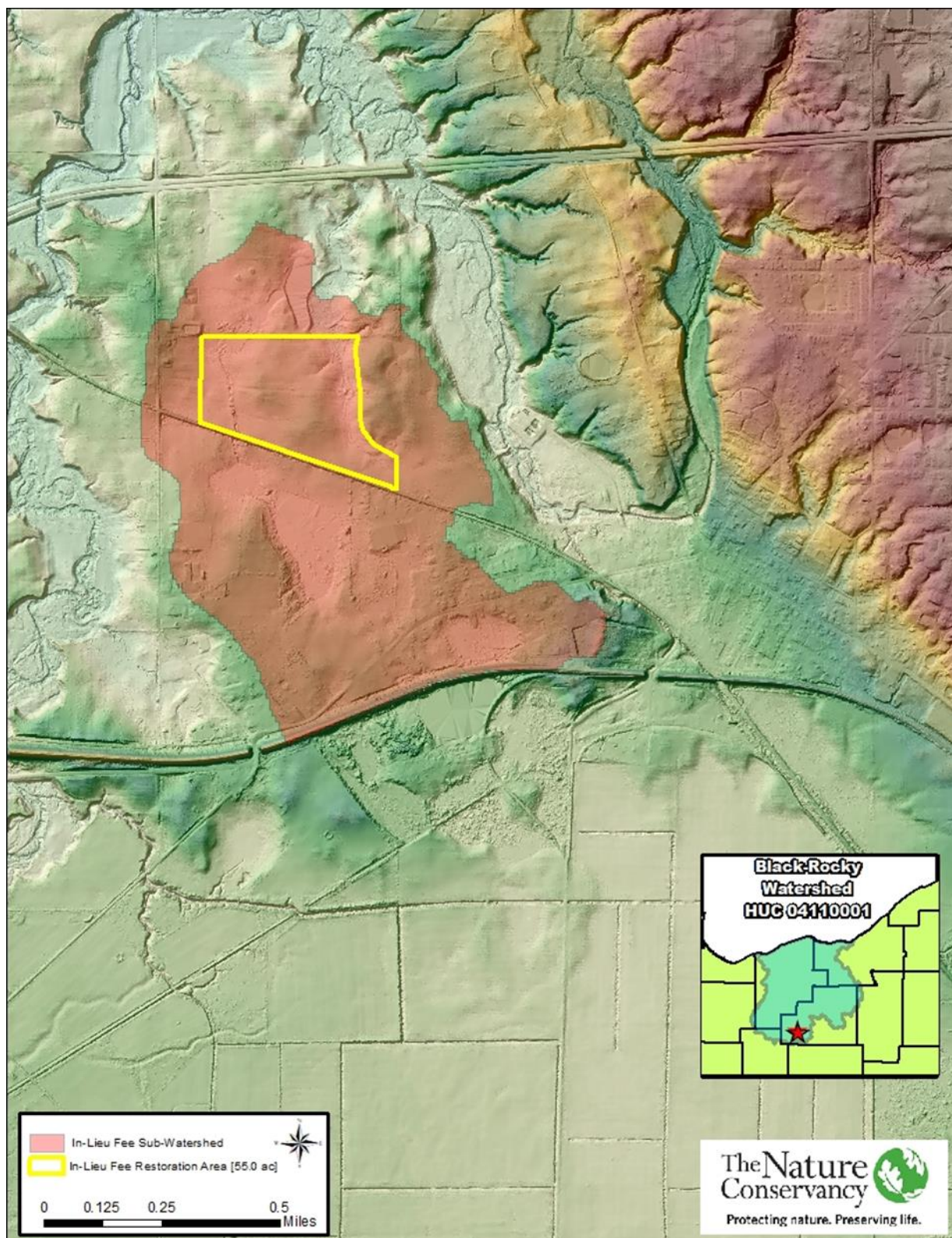


Figure 4. Black River Preserve In-Lieu Fee Project Watershed Map

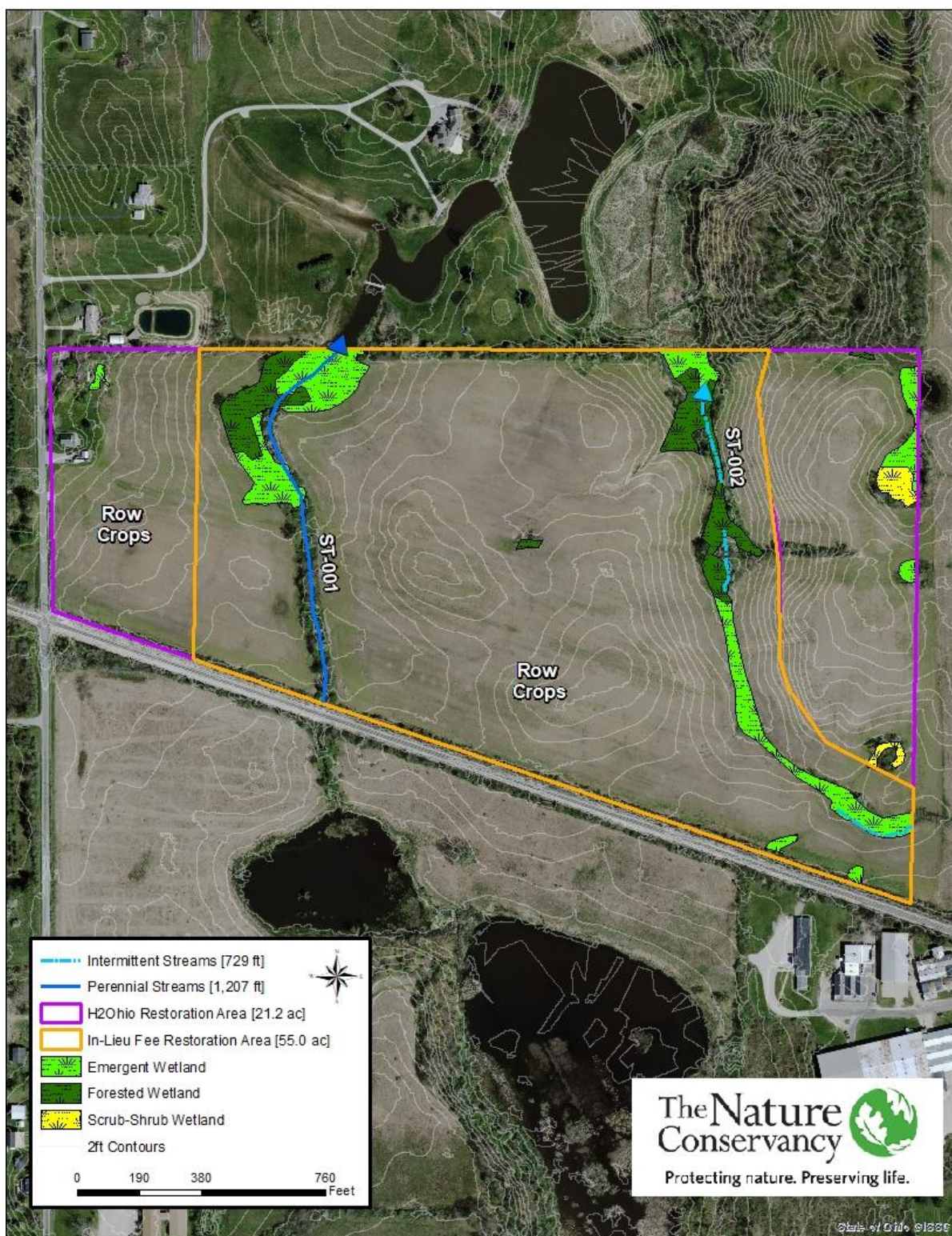
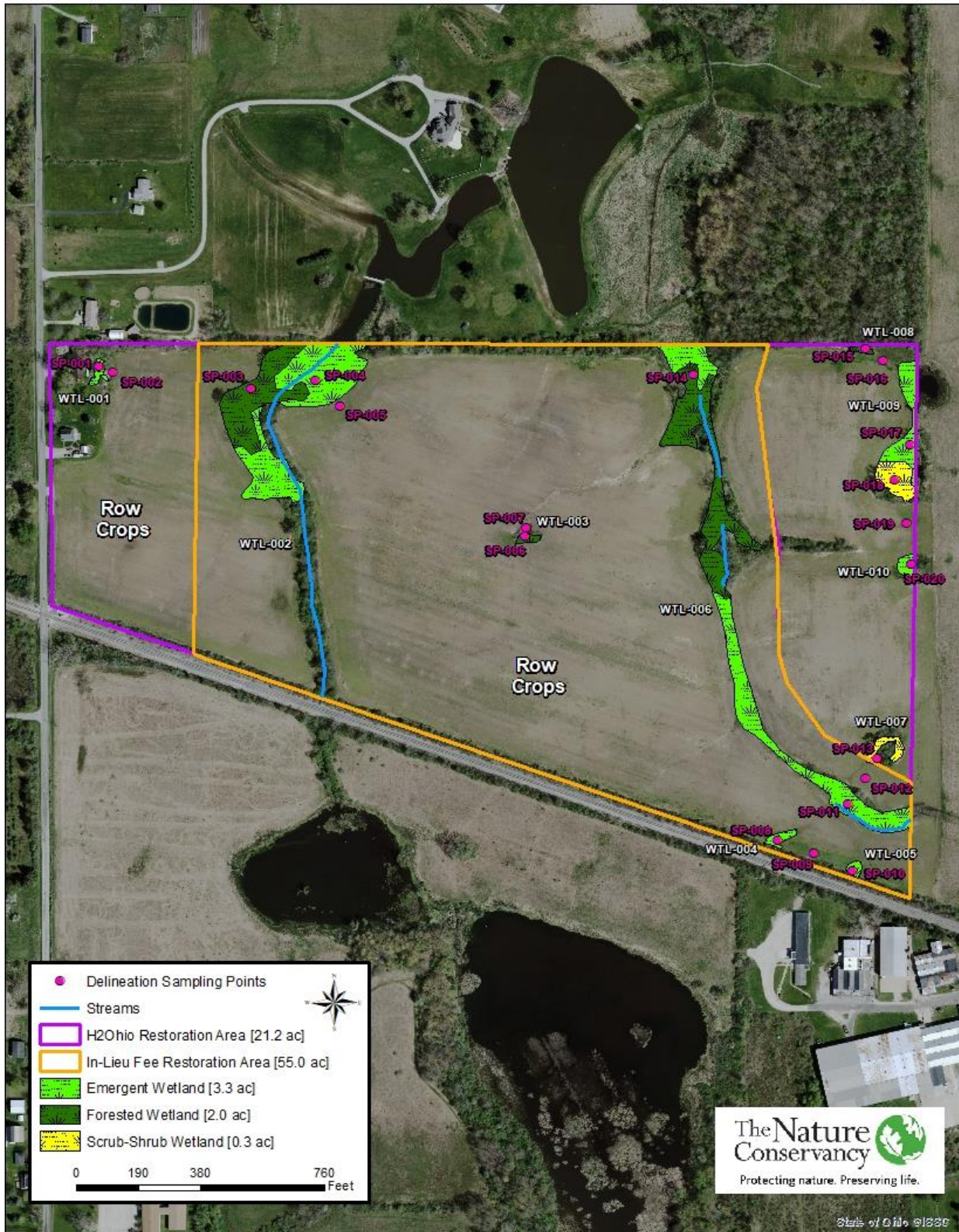


Figure 5. Black River Preserve In-Lieu Fee Project Stream Resources and Terrestrial Resources Map



**Figure 6. Black River Preserve In-Lieu Fee Project
Wetland Resources and Terrestrial Resources Map**

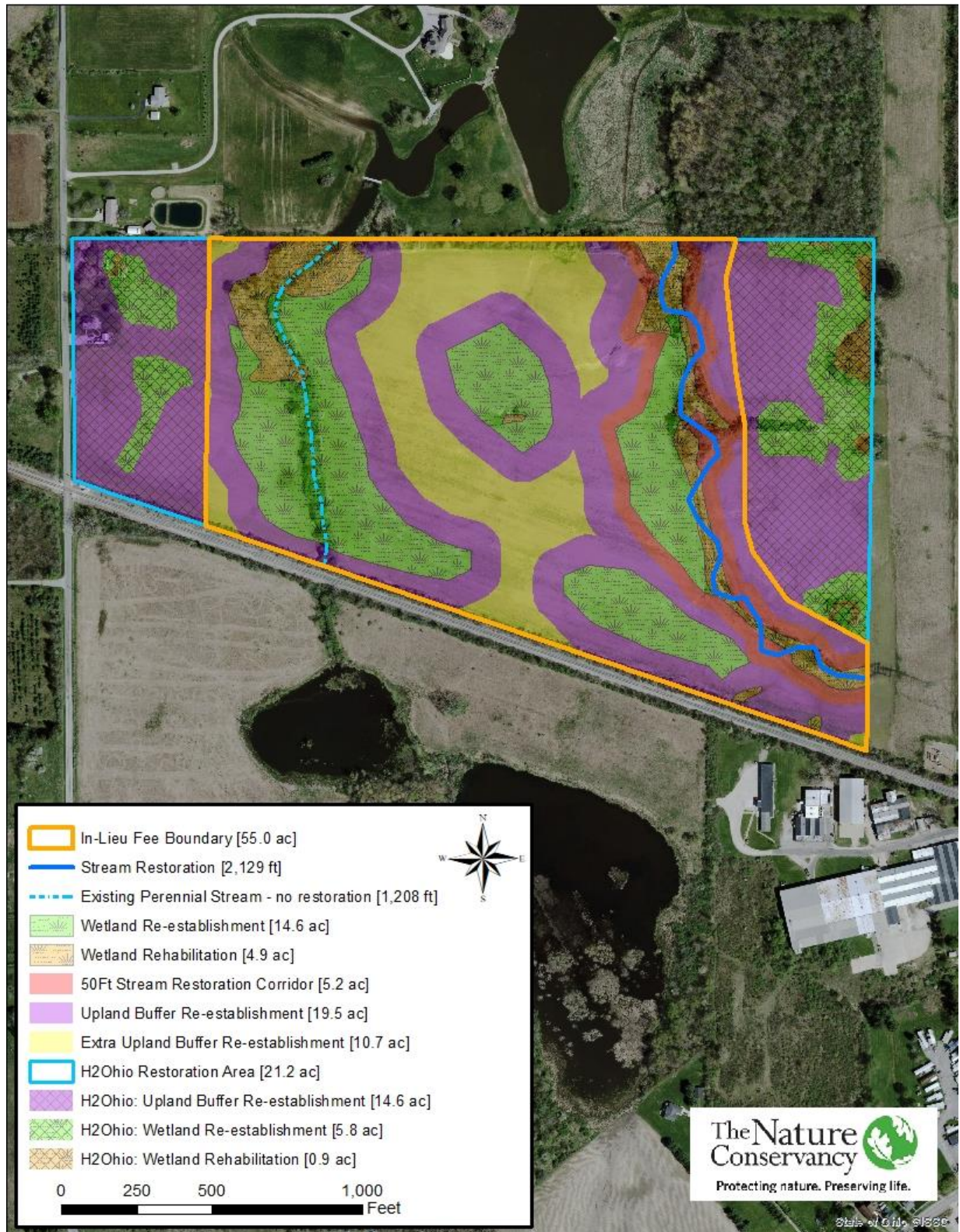


Figure 7. Black River Preserve In-Lieu Fee Project Site Restoration Map

APPENDIX B

Site Selection Checklist

TNC ILF Program Site Selection Checklist

Mitigation Site Summary

| | |
|--|-----------------------------------|
| Site Name | Black River Preserve |
| Nominating Entity | West Creek Conservancy |
| Watershed (HUC-8) | Black-Rocky Rivers (04110001) |
| County | Medina |
| City | Lodi |
| Parcel I.D. /Latitude Longitude | 954123176 / 41.038582, -82.029137 |
| Site Size (ac) | 55.0 ac |

The following conditions must be met for all projects. If any of the boxes are left unchecked the proposed property is currently not an appropriate OMP project site.

- ☒ Permanent Protection (The property is currently, or can be, protected in perpetuity)
- ☒ In Kind Mitigation (The property will provide the same type and amount of resource needed)
- ☒ Primary Service Area (The property is in a HUC-8 watershed that has OMP funds)
- ☒ Water resources impacts on the property can be restored on site and are not the result of uncorrectable watershed-scale problems (examples: toxic inputs, combined sewer overflows)
- ☒ The property is NOT known to have severed mineral rights. Generally, ILF project sites are not acceptable if there is a potential threat of mineral extraction on the property.

| | Metric Summary |
|--|----------------|
| Site Score | 72 |
| Stream Metric Score | 80 |
| Wetland Metric Score | 76 |
| Estimated cost of site protection | \$400,000 |
| Estimated Stream Credits Generated | 5,586 |
| Estimated Wetland Credits Generated | 22.1 |
| Estimated Complexity of Protection Based on Landowner(s) Interest and number of parcels involved (Low, Medium, High) | Low |

Additional Considerations (circle all that apply): flood attenuation, nutrient assimilation, recreation, economic activity, education/public outreach, job creation, scenic enhancements

Other:

Site Comments

TNC ILF Program Site Selection Checklist: Site Metrics
Site Name: Black River Preserve

| Site Metrics | Evaluation Parameter | Score |
|---|--|-------|
| 1. Watershed-Based Priorities (Choose all that apply) | | |
| 1 | Adjacent to restoration project | |
| 1 | Included in a Balanced Growth Plan | |
| 2 | Within same HUC-12 watershed as impact site(s) | |
| 2 | Adjacent/within protected conservation property | 2 |
| 2 | Would meet a TMDL strategy | 2 |
| 3 | Is an existing Watershed Action Plan priority | 3 |
| 4 | Within Compensation Planning Framework priority area | 4 |
| Add all that apply SUBTOTAL (Max 15 pts): | | 11 |
| 2. Current Ownership - Level of Support for Conservation | | |
| 1 | Private property | |
| 3 | Private property protected open space | |
| 4 | Publicly Owned (but not a Park) | |
| 5 | Park District/Conservation Ownership | 5 |
| -2 | Multiple Ownership (separate parcels) | |
| -5 | Utility easement/Road impact aquatic resources or buffer | |
| SUBTOTAL (Max 5 pts): | | 5 |
| 3. Sustainability of Proposed Long-term Protection | | |
| 0 | Conservation easement purchase | |
| 5 | Conservation easement donation | |
| 5 | Existing Public land (not protected) | |
| 10 | Already protected land | |
| 10 | Fee simple purchase | 10 |
| SUBTOTAL (Max 10pts): | | 10 |
| 4. Cost of Property Protection | | |
| 0 | Cost per Acre is at or below the CAUV average for the county | |
| 10 | No cost because already protected or donated easement/covenant | |
| 10 | Potential for a significant, additional funding source(s) for site protection (>25% of total cost) | 10 |
| -5 | Cost per Acre is above the CAUV average for the county | |
| SUBTOTAL (Max 10pts): | | 10 |
| 5. Percent of Project Area within 50m from property line, road, utility easement | | |
| 0 | >90% | |
| 1 | 90-75% | |
| 3 | 75-50% | |
| 7 | 25-50% | 7 |
| 10 | <25% | |
| SUBTOTAL (Max 10pts): | | 7 |

| Site Metrics | Evaluation Parameter | Score |
|--|--|-----------|
| 6. Identified Potential Long-term Manager of Property - such entity must have the necessary financial, administrative, and technical capacity | | |
| 5 | Potential entity identified | |
| 10 | Interested entity | |
| 15 | Committed entity | 15 |
| -2 | None | |
| SUBTOTAL (Max 5 pts): | | 15 |
| 7. Adjacent/Upstream Property Potential Future Land Use (20 years) (Choose 1 or 2 and average) | | |
| | N/A | |
| 1 | suburban high density (multiple subdivisions) | |
| 1 | Urban | |
| 1 | Industrial | |
| 3 | suburban low density (occasional home sites) | X |
| 8 | Rural /Agricultural | |
| 10 | Unimpacted / Forested | X |
| -1 | Future roads/highway expansion | |
| SUBTOTAL (Max 10pts): | | 6.5 |
| 8. Special Ecosystems Onsite (Choose all that apply) | | |
| Onsite | *If none apply score 0 | |
| | Designated CWH/EWH/Superior State Waters/Outstanding State Waters | |
| 1 | Category 3 wetland | |
| 1 | Known Federal or State Listed Species | |
| 1 | Known significant wildlife use | |
| 1 | Park or Conservation Area | 1 |
| Add all that apply SUBTOTAL (Max 5 pts): | | 1 |
| 9. Special Ecosystems Adjacent (Check all that apply) | | |
| Adjacent | *If none apply score 0 | |
| 3 | CWH/EWH/Superior State Waters/Outstanding State Waters | |
| 3 | Category 3 wetland | |
| 3 | Known Federal or State Listed Species | |
| 3 | Known significant wildlife use | 3 |
| 3 | Park or Conservation Area | 3 |
| Add all that apply SUBTOTAL (Max 15 pts): | | 6 |
| 10. Existing Information on Parcel (Choose all that apply) | | |
| 1 | Phase I or equivalent information completed | |
| 1 | Delineation completed (Date -) <input type="checkbox"/> Approved JD | |
| 1 | Biological inventories completed (IBI, ICI, VIBI, AmphIBI) | |
| 1 | Habitat inventory completed (QHEI, HHEI, ORAM) | |
| 1 | Morphology data | |
| Add all that apply SUBTOTAL (Max 15 pts): | | 0 |
| SITE METRIC TOTAL SCORE (Max 100 pts) | | 72 |

TNC ILF Program Site Selection Checklist: Stream Metrics

Site Name: Black River Preserve

| Stream Metrics | Evaluation Parameter | Score |
|--|--|-------|
| 1. Type of Stream Restoration (Select 1 and add Mit. 4 if applicable) | | |
| 1 | Mitigation Type 4: Additional buffer work beyond 50 foot riparian area | |
| 1 | Mitigation Type 2: preservation | |
| 2 | Mitigation Type 3: Buffer only Enhancement or re-establishment | |
| 4 | Mitigation Type 1: Level 4: Rehabilitation work on streams that directly benefit channel stability, water quality and stream ecology | |
| 5 | Mitigation Type 1: Level 3: May include but are not limited to full-extent restoration on all stream types (used for high-gradient streams with limited floodplains) | |
| 7 | Mitigation Type 1: Level 2: full-extent channel restoration including re-establishment of new floodplain on perennial or intermittent | |
| 9 | Mitigation Type 1: Level 1: full-extent channel restoration including reconnection to original floodplain on perennial or intermittent | 9 |
| Add all that apply SUBTOTAL (Max 10 pts): | | 9 |
| 2. Flow Regime | | |
| 1 | Ephemeral | |
| 2 | Interstitial | |
| 4 | Intermittent | 4 |
| 5 | Perennial | |
| SUBTOTAL (Max 5 pts): | | 4 |
| 3. Potential Length | | |
| 0 | <1000 | |
| 5 | 1000-2000 | |
| 10 | 2000-3000 | 10 |
| 15 | >3000 | |
| SUBTOTAL (Max 15pts): | | 10 |
| 4. Drainage Area from furthest downstream point (select 1 per stream) | | |
| 2 | 0-50 acres | |
| 2 | 20+ sq mi | |
| 4 | 50-200 acres | |
| 4 | 10-20 sq mi | |
| 6 | 200-400 acre | |
| 6 | 5-10 sq mi | |
| 8 | 400-640 acres | 8 |
| 8 | 3-5 sq mi | |
| 10 | 1-3 sq mi | |
| SUBTOTAL (Max 10pts): | | 8 |
| 5. Overall Stream and Riparian Condition (choose 1 or 2 and average) | | |
| Restoration | | |
| 0 | Stable, natural unimpacted | |
| 2 | Recovered, modified or channelized, natural | |
| 10 | Unrecovered disturbed, modified, or armored | |
| 15 | Unrecovered Channelized/Culverted/Dammed | 15 |
| SUBTOTAL (Max 15pts): | | 15 |

| Stream Metrics | Evaluation Parameter | Score |
|---|---|-------|
| 6. Cause of Impairment (Select 1 or 2 and average) | | |
| 0 | little to no impairments | |
| 8 | impacts partly from correctable channel modifications unrelated to watershed-scale problems | |
| 10 | correctable channel modifications within properly functioning watersheds | 10 |
| SUBTOTAL (Max 10 pts): | | 10 |
| 7. Gradient (Select 1 or 2 and average) | | |
| 1 | high >3.0% | |
| 2 | mod. High 1.5-3.0 | |
| 3 | low<0.5% | |
| 4 | moderate 0.8-1.5% | 4 |
| 5 | mod. Low 0.5-0.8% | |
| SUBTOTAL (Max 5 pts): | | 4 |
| 8. Biological Restoration Potential (choose all that apply) | | |
| 1 | Project reach is <1 Rivermile (RM) of 4th order stream or larger | 1 |
| 2 | Project reach is in attainment of stream potential (WWH / PHWH) | |
| 2 | Depth of topsoil is greater than 2 inches within the riparian buffer | 2 |
| 3 | Upstream is in attainment of stream potential | |
| 3 | Project reach is in Non-attainment of stream potential (WWH / PHWH) | 3 |
| 4 | Downstream is in attainment of stream potential | 4 |
| -1 | Upstream project reach is in Non-attainment of stream potential | |
| -5 | Project reach is upstream of significant humanmade obstruction to fish passage | |
| -5 | Downstream of project reach is in Non-attainment of stream potential | |
| SUBTOTAL (Max 15 points): | | 10 |
| 9. Project Complexity | | |
| 9.1 Floodplain Restoration (Select 1 that best describes approach) | | |
| 1 | Stabilize stream in place (high gradient stream with no significant floodplain) | |
| 5 | Excavate new floodplain | 5 |
| 7 | Need to elevate stream to attach it to historic floodplain | |
| 10 | Still attached to historic floodplain | |
| Sub-subtotal (Max 10): | | 5 |
| 9.2 Rank Project Components on scale -1 to 1 (-1 difficult/poor to 1 simplistic/excellent) | | |
| 1 or -1 | Good Site access / trucking access / ease of equipment movement | 1 |
| 1 or -1 | Balanced Cut and fill requirements | 1 |
| 1 or -1 | Low amount of fill import needed | 1 |
| 1 or -1 | On-site spoil potential / material available | 1 |
| 1 or -1 | No water diversion / control required during construction | 1 |
| Sub-subtotal (Max 5): | | 5 |
| Metric 9 SUBTOTAL (Max 15 points): | | 10 |
| STREAM METRIC TOTAL SCORE (Max 100 pts) | | 80.0 |

TNC ILF Program Site Selection Checklist: Wetland Metrics
Site Name: Black River Preserve

| Wetland Metrics | Evaluation Parameter | Score |
|--|-------------------------------------|-------|
| 1. Type of Wetland Restoration | | |
| 3 | Preservation of Category 3 wetlands | |
| 10 | Enhancement of Existing Wetlands | |
| 15 | Restoration of hydric soil areas | 15 |
| SUBTOTAL (Max 15 points): | | 15 |
| 2. Soil Drainage Class | | |
| 3 | Somewhat Poorly Drained (SPD) | |
| 6 | Poorly Drained (PD) | 6 |
| 10 | Very Poorly Drained (VPD) | |
| -50 (highly undesirable) | Only non-hydric soils present | |
| SUBTOTAL (Max 10 points): | | 6 |
| 3. Slope of Proposed Restoration Site based on topo map or Soil Survey Classification | | |
| 3 | 2-6% | |
| 7 | 0.5-2% | 7 |
| 10 | 0-0.5% | |
| -50 (highly undesirable) | >6% | |
| SUBTOTAL (Max 10 points): | | 7 |
| 4. Current Impairments (check all that apply) | | |
| 1 | invasive species | 1 |
| 2 | Tilling | 2 |
| 2 | filling/grading | |
| 2 | mowing | 2 |
| 2 | clearing | 2 |
| 3 | tile | 3 |
| 3 | ditch | 3 |
| -1 | stormwater inputs | |
| -1 | Urban/residential encroachment | |
| SUBTOTAL (Max 15 points): | | 13 |
| 5. Final Expected Condition | | |
| 3 | Emergent | |
| 5 | wet prairie/sedge meadow | |
| 5 | Scrub-shrub | |
| 10 | bog/fen/kettle lake | |
| 10 | Forested (vernal pool, wet woods) | 10 |
| SUBTOTAL (Max 10 points): | | 10 |
| 6. Wetland Restoration/Creation Acreage | | |
| 0 | 0-5 ac | 0 |
| 5 | 5-10 ac | |
| 7 | 10-25 ac | 7 |
| 10 | 25-50 ac | |
| 12 | 50-100ac | |
| 15 | 100+ ac | |
| SUBTOTAL (Max 15 points): | | 7 |

| Wetland Metrics | Evaluation Parameter | Score |
|--|--|-----------|
| 7. Project Complexity | | |
| 7.1 | <i>Likely Construction Methods (score all that apply)</i> | |
| 1 | excavation | 1 |
| 1 | water control structure manipulation | |
| 4 | break tile | 4 |
| -1 | berm construction | |
| -1 | diversion channel | |
| SUBTOTAL (Max 5 points): | | 5 |
| 7.2 | <i>Planting Effort Required ((d)(1)(i))</i> | |
| 1 | High | |
| 3 | Medium | 3 |
| 5 | Low | |
| SUBTOTAL (Max 5 points): | | 3 |
| 7.3 | <i>Threats to Project Success (invasives, point sources, easements, herbivory)</i> | |
| 5 | Medium | 5 |
| 8 | Low | |
| 10 | none | |
| -3 | High | |
| SUBTOTAL (Max 10 points): | | 5 |
| 7.4 | <i>Rank Project Components on scale -1 to 1 (-1 difficult/poor to 1 simplistic/excellent) ((d)(1)(i))</i> | |
| 1 or -1 | Good site access / trucking access / ease of equipment movement | 1 |
| 1 or -1 | Balanced cut and fill potential | 1 |
| 1 or -1 | Low amount of fill import needed | 1 |
| 1 or -1 | On-site spoil potential / material available | 1 |
| 1 or -1 | No water diversion / control required | 1 |
| sub-subtotal (Max 5 points): | | 5 |
| Metric 7 SUBTOTAL (Max 25 points): | | 18 |
| Wetland Metric Score: | | 76 |
| WETLAND METRIC TOTAL SCORE (Max 100 pts): | | 76 |

APPENDIX C

State and Federal Coordination for Listed Species

Ohio

County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species

<https://www.fws.gov/midwest/endangered/lists/ohio-cty.html> accessed 6/4/2021

Revised January 29, 2018

| County | Species | Status | Habitat |
|--------|---|------------|---|
| Medina | Indiana bat (Myotis sodalis) | Endangered | Hibernacula = Caves and mines; Maternity and foraging habitat = small stream corridors with well-developed riparian woods; upland forests |
| | Northern long-eared bat Myotis septentrionalis | Threatened | Hibernates in caves and mines - swarming in surrounding wooded areas in autumn. During late spring and summer roosts and forages in upland forests. |

APPENDIX D

TNC Responses to IRT Comments

RESPONSE TO IRT COMMENTS - DRAFT MITIGATION PLAN

TNC received compiled comments from the US Army Corps of Engineers Buffalo District (Susan Baker) on behalf of the Ohio IRT dated January 5, 2021. Comments from the IRT are in bold and underlined with follow up from TNC in italics.

- a) **The success of this project relies on restoring “natural flow” to two tributaries of the East Fork Black River but The Sponsor does not indicate how natural flow is currently impeded nor how it will be restored. Additionally, immediately to the north is the Knollbrook Golf Course. Golf course runoff is a known source of aquatic pollution and may impact the quality of both the streams and wetlands onsite. EPA recommends that the Corps require more information on site including baseline conditions (topography, stream flow direction, etc.,) proposed instream work, baseline conditions, and anticipated conditions. The Sponsor should also evaluate the water quality impacts and management/mitigation of golf course runoff.**

Knollbrook Golf Course is permanently closed. Additionally, the streams flow south to north, so it is unlikely that any legacy pollution would impact the mitigation area. Some baseline information is included in this mitigation plan, and more detailed baseline data will be collected by the contractor once the design-build contract is in place. This data will be provided with preliminary design plans in the Draft Amendment.

- b) **The Sponsor indicates that a formal wetland delineation has not occurred and that drain tiles will be broken if found to rehabilitate or restore riparian wetlands. Being adjacent to a stream may not provide hydrology adequate to support wetlands. EPA recommends the Sponsor investigate the Site further to determine its suitability as wetland mitigation site and the best use of existing site conditions. The Sponsor could better demonstrate the potential for wetland hydrology on the site by providing tile maps, a water budget, soil surveys, and historic aerial photos or wetland delineation.**

The wetland delineation and historic aerial imagery are provided in the mitigation plan. The other details will be included during the design phase of project development.

- c) **The ILF footprint is smaller than the parcel boundary. EPA recommends that the Sponsor extend ILF boundary the east to provide better habitat connectivity to the East Fork Nature Preserve or provide reasoning for the ILF boundary shape.**

The parcel is in the process of being acquired by our conservation partner – West Creek Conservancy. The remaining areas of the parcel will be restored by H2Ohio, which is a state-led program seeking to improve water quality in Ohio. TNC has no ability to expand this area beyond the amount necessary to fulfill our wetland and stream credit obligations in the Black-Rocky Watershed.

- d) Buffers size is not given, and along the ILF boundaries they appear to be irregular in size. EPA recommends that the Corps require the Sponsor to have 100-foot wetland buffers where possible, and adequate protections in place from potential threats (run-off, recreational encroachment, railroad, etc.).**

TNC will maximize the buffer to the extent practicable as the plans develop. The current buffer is at least 100', and many areas have a greater buffer width. If the buffer width is less than what is desired, wetland crediting will be modified to conform to the Guidelines for Wetland Mitigation Banking and In-Lieu Fee Programs in Ohio, Version 2.0 (September 2020).

- e) How might adjacent uses affect the site? Is the railroad active?**

The land to the west, south, and east is all protected as parkland by Medina County Parks. As water flow is to the north, the northern residential property is unlikely to affect the restoration project. The railroad is active. Site plans have been modified to conform to the Guidelines for Wetland Mitigation Banking and In-Lieu Fee Programs in Ohio, Version 2.0 (September 2020) to account for potential effects on the project from adjacent land uses.

- f) Who will own the remainder of the parcel east and west of the ILF site and how might it be managed?**

West Creek Conservancy will own the entire property. The areas to the east and west will be restored by the H2Ohio program (see response to comment c).

- g) What are the potential effects of the ILF project on adjacent properties?**

As most of the area surrounding the site are already protected and being restored, this project will fit very nicely with the overall habitat improvements within the greater park complex.

- h) Are there any encumbrances/easements on the site?**

A preliminary title report has been ordered and it shows no severed mineral or oil/gas rights. There is a 30' wide drainage easement along the western stream, but the

likelihood that it will be utilized is very remote. TNC will submit a remoteness report to the Corps explaining our reasoning.

- i) **It is recommended that TNC coordinate with the Ohio Historic Preservation Office early in the process. There are two mapped archeological sites (ME0179 and ME0227) just east of the proposed ILF site.**

Noted.

- j) **If the ILF site is ultimately owned by a park district, it is recommended that TNC engage the park district early to determine what, if any trails or facilities might be proposed. These features should be factored into the mitigation plan and crediting.**

Noted.

- k) **Who is the proposed conversation easement holder or environmental covenant third party?**

TNC is the proposed conservation easement holder.

- l) **It appears there is a small channel (possibly ephemeral) that flows northeast into the eastern tributary as well as a ditch that flows west into the eastern tributary. These features should be mapped and factored into the mitigation plan.**

A formal delineation has been completed and maps included in this mitigation plan show all features identified during that process.

- m) **The budget lists \$425,000 for the estimated cost of site protection. What does this amount include?**

This amount includes funds for site acquisition, which would be transferred to West Creek Conservancy, as well as the title search, boundary survey, and cost of recording the final site protection instrument.

- n) **Additional information regarding the proposed stream design, reference reach(es), reference wetlands, and ratios will be beneficial for IRT review.**

These details will be included once a design firm has been hired to develop a plan for the project.

- o) **It appears there are numerous wet signatures in the fields; aerial imagery may help to pinpoint areas that require closer investigation. The**

agricultural fields should be delineated using Chapter 5 of the Regional Supplement.

A formal delineation has been completed and maps included in this mitigation plan include all features identified during that process.

p) What is the extent of tiling on the site? How has it been determined that the requisite hydrology can be established given the relatively low hydric rating of the soils on the site?

We do not know the extent of tiling at this preliminary stage of the project. These details will be included once a design firm has been hired to develop a plan for the project.

q) What is the extent of invasive species on the site and on adjacent properties?

Existing wetlands along the stream channels are dominated by Reed Canary Grass. These areas will be eradicated and planted with a high-quality native plant community as part of the project development. Additional details on the existing plant community will be included as more information is collected during the design process of the project development.

r) Baseline condition information should be provided for the streams and existing wetlands. This will help to set performance targets and assist with the determination of credits based on project functional lift.

Noted.

s) For the wetland rehabilitation areas, what is the proposed functional lift other than improvements in the vegetation community? How will this be evaluated and what will the performance targets be? If the goal is primarily improvements to the vegetation community, wetland enhancement (1:4) might be more appropriate.

These wetlands are also expected to see a significant improvement to the hydrologic regime via disruption of subsurface drainage and reconnection of stream channels to adjacent floodplains.

t) The western stream has several impoundments just downstream of this site (remnants from a golf course). How beneficial will the stream restoration

work be if the restored stream almost immediately enters a series of ponds?

TNC believes that these stream improvements would significantly improve downstream waters, even though the presence of the impoundments is not optimal. However, due to budget constraints we are currently only pursuing stream restoration on the eastern stream.

- u) **The proposed restoration plan map indicates that the areas mapped as predominantly hydric soils are targeted for stream/wetland buffer. Would these areas potentially be better suited as targeted wetland re-establishment areas?**

At this very early stage in the project, all mapping should be considered extremely preliminary. As the site plans become more detailed during the design phase of the project, restoration mapping will be refined to closely align with the most ecologically preferable based on a host of factors, including a more robust soils analysis.

- v) **Page 8, Section 9 – “excavate new floodplain” is indicated. The proposed stream work would more appropriately fall under Type 1, Level 2 restoration rather than Type 1, Level 1 (bringing the stream up to the original floodplain). The proposed credit ratio should be justified based on demonstrable functional uplift. The highest credit ratio for the restoration type may not be appropriate for the proposed work/functional lift.**

Noted.

- w) **Is any tree clearing proposed?**

At this time, it is not known if or where tree clearing may occur. As site design plans are developed, these details will be included in future submittals.